

# AIRFIX magazine

September 1975  
FOR PLASTIC MODELLERS  
monthly 25p



## in this issue

Scratch-built Matilda I in 1:35 scale  
French Army and Air Force displays  
Motorising 1:72 scale aircraft models





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# AIRFIX magazine

September 1975  
Volume 17 Number 1

## FOR PLASTIC MODELLERS

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### Cover Picture

M-109 155 mm self-propelled howitzer of 176 Battery, 39 Medium Regiment, Royal Artillery, during training in Germany earlier this year. This vehicle, developed from the M-108, can fire three rounds a minute and has a nuclear capacity. It carries a crew of six together with 28 rounds of ammunition, has a cruising range of 360 kilometres and a top speed of 56 kph on road (photo by S/Sgt J. K. McLaughlin, Army PR).

### Price increase

IT IS WITH regret that we have been forced to raise the price from this issue of *Airfix Magazine*, but severe increases in material and labour costs over recent months have made it unavoidable. However, the increase has been kept to the absolute minimum, and we are sure all readers will agree that *Airfix Magazine* still represents excellent value for money in today's inflationary environment. Ed.

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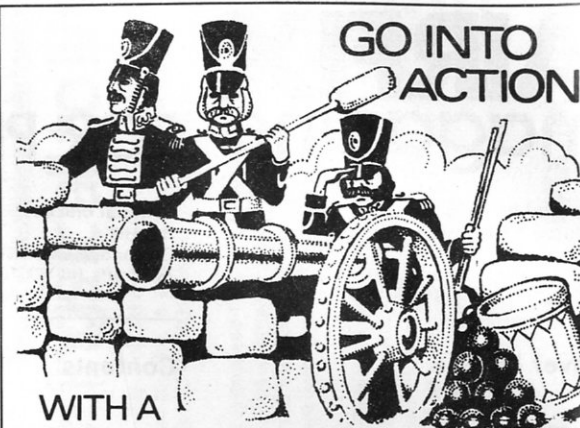
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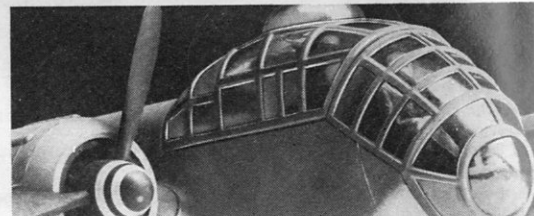


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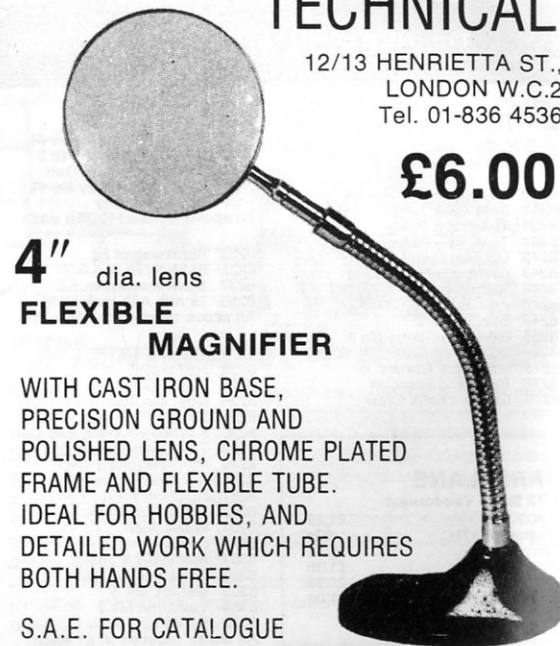
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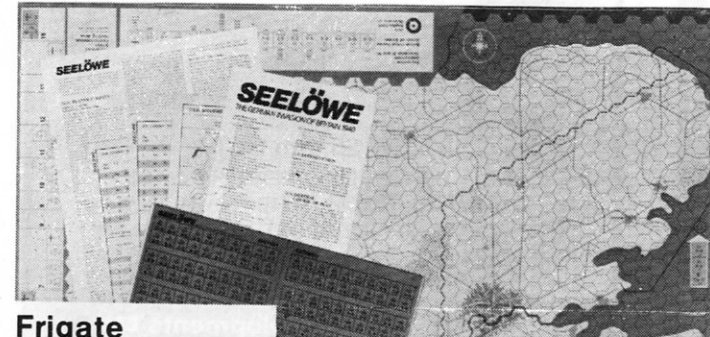
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GR2	German Support
	Group
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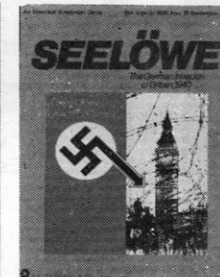
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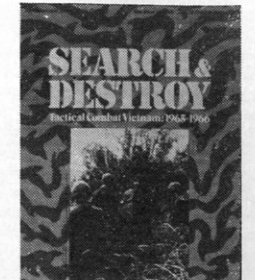
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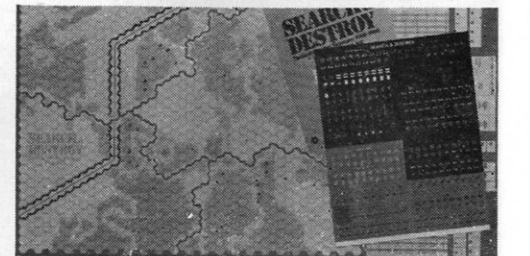


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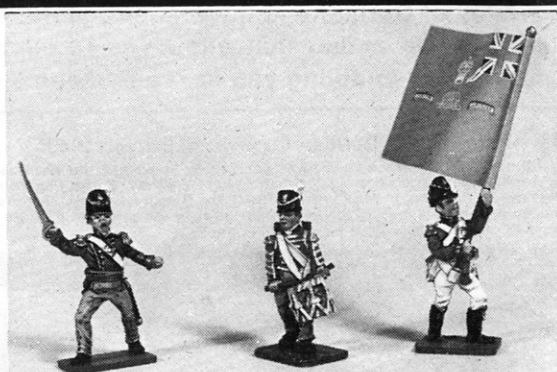
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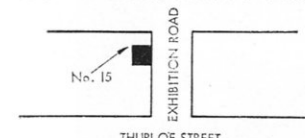
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- RE18 Russian Streltsi firing
- RE19 Russian Streltsi Officer
- RE20 Russian Streltsi drummer
- RE21 Russian Zaporozian infantry with axe
- RE22 Russian Foot Cossack with arquebus

### Russian Renaissance Cavalry (REC)

- REC10 Russian Noble cavalry man
- REC11 Russian Noble Officer
- REC12 Russian Noble in mail coat
- REC13 Russian horse archer
- REC14 Russian archer with mace
- REC15 Russian heavy cavalryman



AWC 5 British Light Dragoon firing carbine

### Russian Napoleonic (RN)

- RN2 Standard Bearer in greatcoat
- RN10 Pavlov Grenadier standard bearer

### Russian Napoleonic Cavalry (RNC)

- RNC6 Cuirassier trooper
- RNC7 Cuirassier Officer
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- RNC9 Hussar trooper
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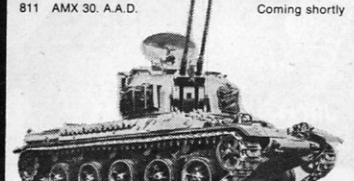
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## news from AIRFIX

- 1 Short Skyvan
- 2 Australian infantry
- 3 Showjumper
- 4 French Line infantry

**1** THE SHORT SKYVAN, known affectionately as the 'five-ton budge' is the latest 1:72 scale Airfix kit. The 153-part kit builds an accurate six-inch long model of this rather strange looking aircraft with its wide, blunt body and small, straight, rather narrow wings.

Markings and colour schemes are provided for a Skyvan of either Olympic Airways or the air force of the Sultan of Oman, and there is a choice of interiors — either two airline crew plus 18 passenger seats for the Olympic version or two Air Force personnel and two bench seats running the length of the aircraft to carry troops and supplies.

The prototype Skyvan made its first flight in January 1965 and a total of 105 Skyvans, both military and civil, had been sold to more than 35 operators by April 1974.

After early trials with the Continental piston engines and the French Astazou turbo-prop, the Skyvan is now powered by American 715 shp Garrett-AiResearch powerplants.

In the civilian role, the Skyvan can carry up to 19 passengers and baggage or the interior can be removed to give a large cargo area for freight.

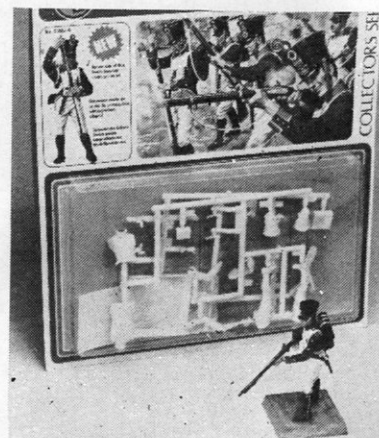
The military Skyvan has a large rear-loading cargo door and can carry up to 22 troops or 5,000 lb of freight. The armed forces of 11 countries, including Austria, Argentina and Ecuador, have ordered the Skyvan. In the service of the Sultan of Oman's Air Force, Skyvans have averaged 2,000 sorties per month, carrying loads varying from goats and sheep to medical supplies or a Land-Rover. Retail price of the kit is 69p.



**2**

FIFTIETH IN the HO/00 scale figures range is this pack of Australian infantry of World War 2. There are 48 figures in 14 different poses — running firing, grenade throwing, kneeling firing etc. Each figure, measuring approximately one inch high, contains a high degree of accurate detail in the uniform, weaponry and supplies. The figures are produced in khaki polythene but can be beautifully painted and finished using Airfix paints.

With the addition of the Australians, there are now a total of 14 packs of World War 2 figures in the range. Retail price is 25p.



Above French Line infantry. Right Showjumper. Below Short Skyvan in Olympic livery.



**3**

AND NOW ONE for the ladies — a superb model of a showjumper taking a fence. This is the second in a series of kits designed to appeal specifically to girls, who have for too long been neglected in the construction kit market.

The kit comes in 42 parts which build to a 9½ inch high model. The details of riding habit, saddle, horse harness and cross bar gate are all accurately shown. Full assembly instructions are given and there is a template from which to cut the stirrup straps and reins. A colour scheme is given to finish the model as it appears on the box illustration — chestnut horse, black and white riding habit and green, red and white fence.

The sport of showjumping has always enjoyed popularity but in recent years the strong royal patronage and many international events held every year in Britain, attracting the world's top riders, have brought it to the forefront and it is now quoted as the second most popular spectator sport in the country today. Retail price of this model is £1.39.

**4**

NEW TO THE Collectors Series is this model of a French Line Infantryman of 1815. The 23-part kit builds to a model approximately 2½ inches high depicting a fusilier of a Line battalion dressed in the 1812 pattern uniform known as the habit veste.

The details of dress, back pack and arms are accurately reproduced. A choice of arms is provided so that the figure can be assembled in either the 'loading' or 'standing firing' position, and the head can be set at varying angles to give each model an individual touch.

French regiments of the period from which the fusilier comes generally consisted of two or three battalions each comprising about six companies. When in line of battle the fusiliers formed the centre with the élite companies of grenadiers and voltigeurs on the flanks. Retail price of the model is 25p.





Peter F. Guiver

## in the air

### French Air Force open day

IN COMMON WITH most Air Forces, the French Air Force (or Armée de l'Air) opens the gates of its various air bases up and down the country in order that the tax-paying public may see where some of its money goes. One such event was held at Metz, in Eastern France, on a sweltering day in the middle of June. This base houses a communications and transport unit, and several Noratlases and Nord 262s were in evidence around the airfield.

The static park consisted of ten aircraft, mainly fighter types, sensibly fenced off thus allowing easy photography with ordinary cameras. Apart from a USAF F-4E Phantom from the 50th TFW at Hahn in Germany, all the other static items were from the French Services, including a rather scruffy F-8E from the French Navy, a Mirage F1, a Mirage IIIE, a Mirage IIIR, a glossy new Jaguar from the 7th Fighter Wing, a well-used looking F-100D Super Sabre from the 11th Wing, a Super Mystere B2 from the 12th Fighter Wing and a Mystere 4A of the

8th Wing. Sole non-fighter type was an immaculate Lockheed T-33.

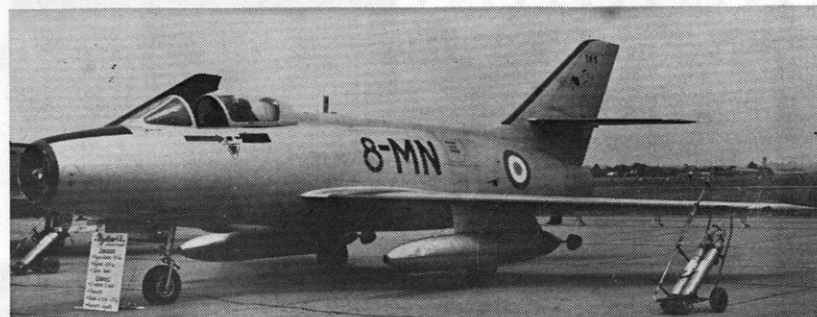
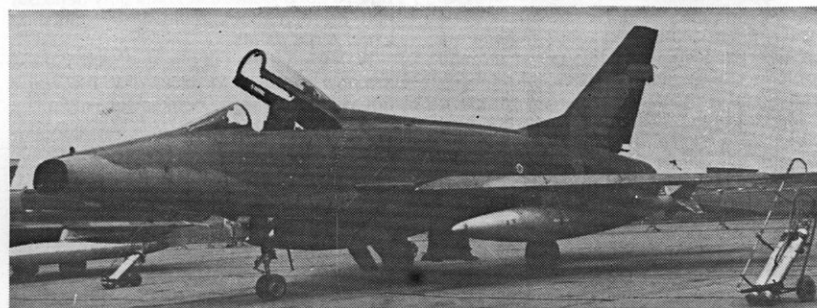
The flying display commenced with some impressive free-fall parachuting by 12 men from a Noratlas, eight of whom linked hands to form a circle on the way down. Thence followed displays by a French Army Gazelle, a Super Sabre thumped its afterburner on and off around the sky, and a Transall per-

formed some very low tight turns, at times on one engine.

Then came demonstrations from a French Navy F-8E Crusader, a Puma of the French Army (L'Armée de la Terre), a Mirage IIIE of the 13th Fighter Wing, and solo aerobatics by a Cap 20. Unfortunately, most of these items tended to be rather far away, making aerial photography difficult even with a telephoto lens.

Six Magisters of 'Les Diables Rouges' from the Belgian Air Force then performed formation aerobatics, whilst the Noratlases climbed aloft again for some more sky-diving. The next item to appear was a heavy rain shower, and the formation aerobatics of 'The Poachers' from the Royal Air Force College, Cranwell, with four Jet Provost T5s was largely unwatched as the large crowd hurried for shelter. Despite the rain the dis-

Continued on page 14

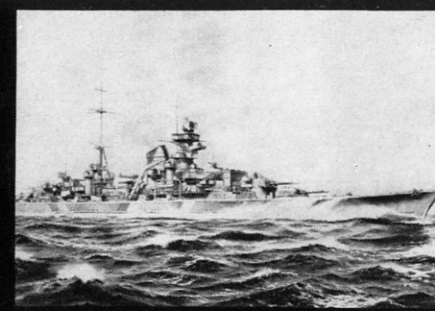


**Top right** F-100D Super Sabre 42203 from the 11th Wing in faded USAF-type camouflage with light grey under surfaces. Underwing fuel tanks are silver with red fins. **Right** All silver Mystere 4A of the 8th Wing with black code (note '8' is stencilled) and serial number 185. Wing tips are yellow. **Below** Fighter fins. Static display line-up at Metz with (left to right) Super Mystere, Super Sabre, Mirage 111R, Mirage 111E, Jaguar, French Navy Crusader and a USAF F-4E Phantom.



## AIRFIX NEW MODELS FILE

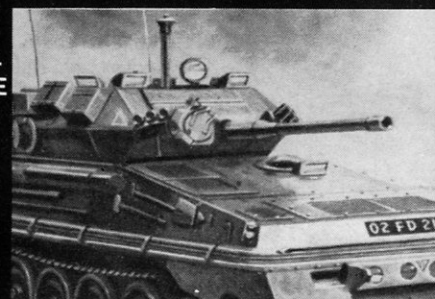
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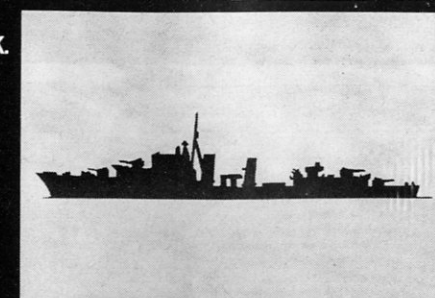


## JANUARY-MARCH

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OF THE  
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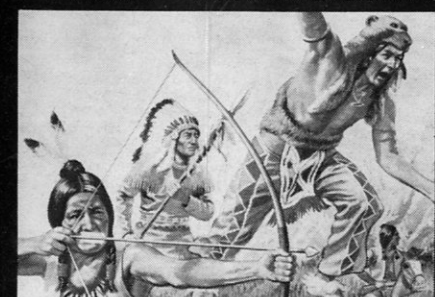
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TRIBAL CLASS  
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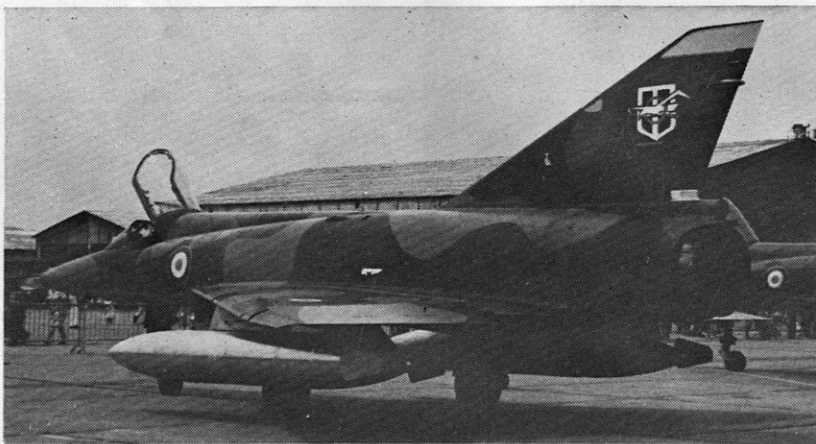
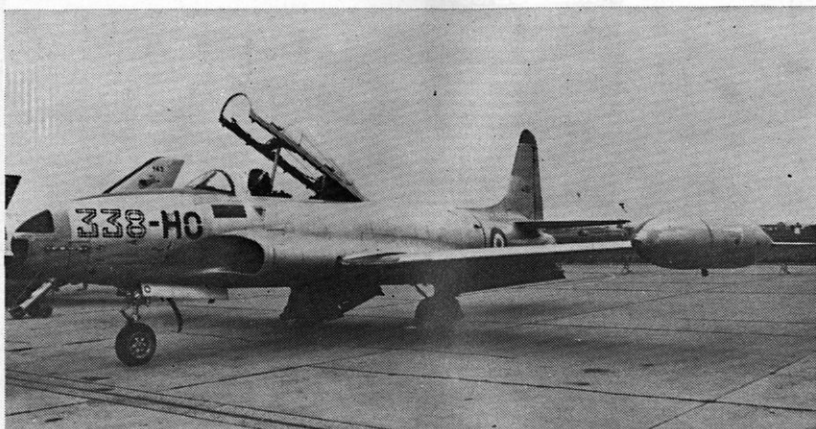
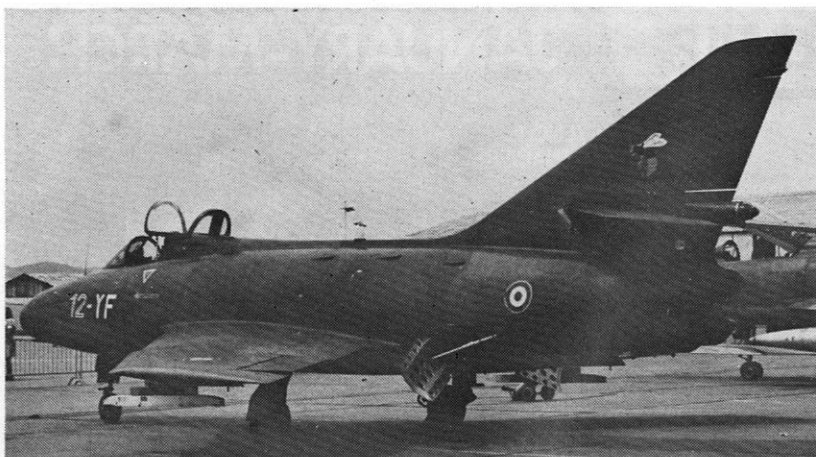


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#### Air Display Diary 1975

Check before your journey, as some dates are unconfirmed.

September 4, 5, 6	Cranfield, Beds.	Flight Business and Light Aviation Show
September 6	Yeovilton, Somerset	Naval Air Day
September 7	Waterbeach, Cambs.	Burma Star Air Display
September 7	RAF Cosford, Salop	Museum Open Day
September 18	Jersey, CI	Battle of Britain Display
September 19	Guernsey, CI	Battle of Britain Display
September 20	Battle of Britain At Home Days at RAF Biggin Hill, RAF St Athan, RAF Finningley and RAF Leuchars.	

Continued from page 12

play continued with solo performances by a Jaguar, a Mirage F1, and a flight re-fuelling demonstration by two French Navy Eten-dards.

The weather was kind to the French Aerobatic Team, for the clouds lifted to enable the 'Patrouille de France' to give their usual polished performance in full. This was the final item in the display, and as they landed the heavens opened again!

**Top left** The 12th Fighter Wing sent this Super Mystere B2 in USAF-style green/olive/light brown camouflage with off-white under surfaces. Nose code white. Fin badge is an insect with black body, yellow head, legs and tail, and white wings. **Centre left** This T-33 was silver overall. Serial 41577 and nose code are black. Upper half of fin, tips of tailplane, nose and main undercarriage doors orange dayglo. Wing-tip fuel tanks had dayglo flash and finlets. **Below left** From the 33rd Wing came this Mirage 111R, number 321, coded 33-NM. Grey/dark green camouflage, light grey under surfaces, silver fuel tanks, white fin tip, red air intakes, black codes and serial. Fin badge is a white bird on a red and white shield with a blue circle.

#### Tridents and Moths at Hatfield

THE CONTRASTING sight of pre-war de Havilland light aircraft and brand new Trident jet airliners for export was provided when the Hawker Siddeley plant at Hatfield held its Open Day on July 5. The Trident line is now concentrating on the order for 33 Model 2Es for the Civil Aviation Administration of China, and the 13th aircraft was in final assembly, whilst major portions of a further seven Trident 2Es could be seen. The Flight Shed contained the first of two Trident Super 3Bs, also for China, with the second Super 3B visible in the Paint Shop.

Meanwhile, out on the airfield there was a very pleasant array of a bygone era, comprising a Cirrus Moth, a Hermes Moth, a Moth Minor, two Leopard Moths, two Puss Moths, and four Hornet Moths. Of course, the Tiger Moths were out in force, and seven of these were present, including three restored in full military colour schemes. However, whether these colours were entirely authentic is open to discussion. Also there were five Chipmunks, some still wearing their recent RAF colours and codes.

The short morning flying display consisted of some of the above items, together with the Blackburn B-2, Hurricane LF363 from Coltishall, Mosquito RR299, the Yeovilton Sea Fury TF956, and a sparkling piece of flying by a HS125. The display was concluded by the Harrier Two-Seater G-VTOL, now carrying the word 'NAVY' across the fin, no doubt in celebration of the recent order for 25 Sea Harriers for the Senior Service. □

Photos on page 16

## AIRFIX NEW MODELS FILE

**SHORT SKYVAN.**  
1/72nd Scale.  
Series 4.



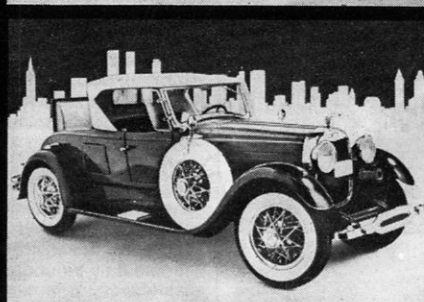
**AIRBUS INDUSTRIE A300B.**  
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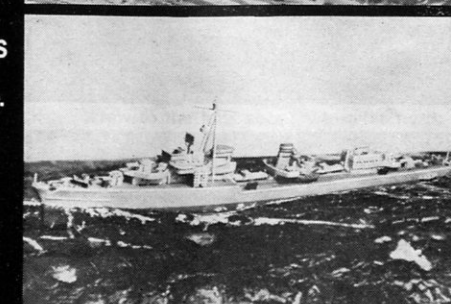


## MARCH-AUGUST

**CRUSADER III TANK.**  
1/32nd Scale.  
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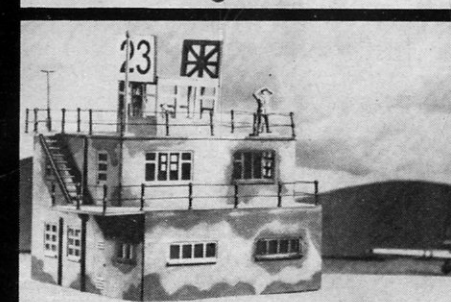
**NARVIK CLASS DESTROYER.**  
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Series 2.



**SOPWITH PUP.**  
1/72nd Scale.  
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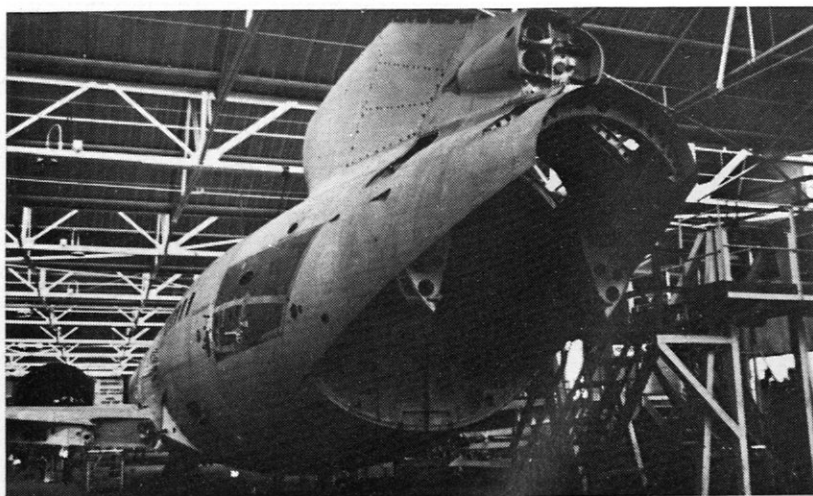


**CONTROL TOWER.**  
OO/HO Scale.  
Series 3.

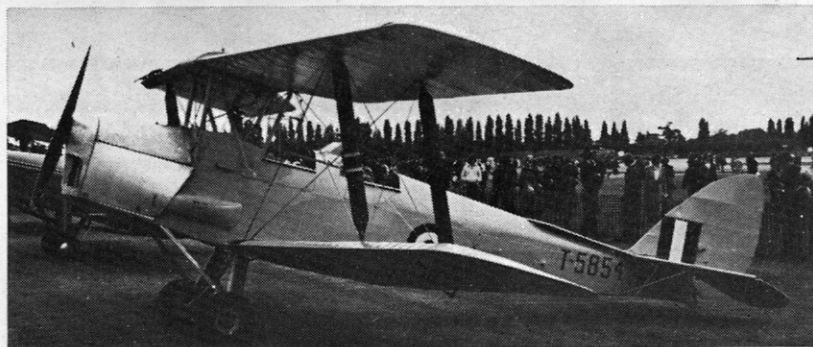
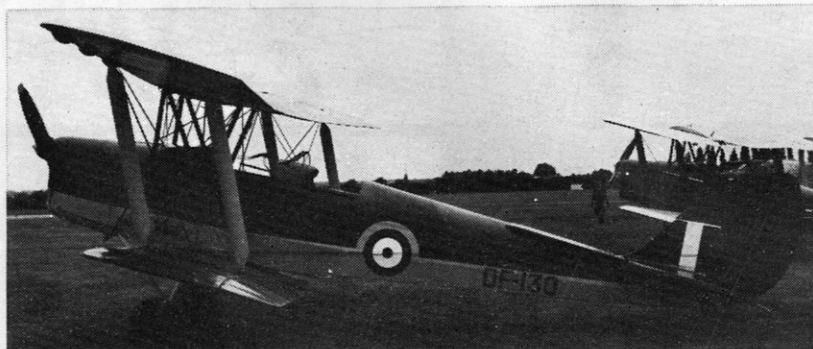


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**Top** Rear fuselage of a Trident 2E for China awaiting tail unit and engines. **Above** The first Trident Super 3B for CAAC China in the Flight Test Hangar. White top, grey lower surfaces, blue cheat lines. **Below** This Tiger Moth has dark green/dark brown camouflage on upper surfaces with yellow lower surfaces and struts. **Bottom** All yellow Tiger Moth T-5854 with silver engine cowling and rear fuselage strakes.



The preparations for Seelowe begin: a German light gun team practising cliff scaling.

WHEN FRANCE FELL Hitler considered the war in the West over. Britain was in no position to fight and was expected to sue for peace. Although at this time the German High Command (OKW) had no plan for an invasion of Britain, some preliminary studies had been made. In late 1939 Admiral Raeder, C-in-C of the German Navy, had asked the OKW to look into the possibility of a landing in Britain and in December the Wehrmacht produced a staff memo recommending a landing in East Anglia by 16 or 17 divisions, including paratroops and a brigade of cyclists.

Raeder's own report advised that before any landing could be attempted British artillery would have to be eliminated, the RAF destroyed, and the RN kept at bay by air superiority. A major port would have to be captured with cranes and railway system intact to enable large ships to land reinforcements, equipment and supplies in bulk — beach landings would be too slow for any follow-up action.

The report concluded that, if the RAF could be knocked out and the RN neutralised, the threat of invasion alone should be sufficient to ensure Britain sued for peace. The Luftwaffe agreed with this assessment, adding that the practical difficulties of an invasion were such that it should only be undertaken as a last resort.

It was not until May 21 1940 that Raeder drew Hitler's attention to the idea of invading England. At this date the battle for France was still raging and Hitler showed no interest in the reports, failing to realise their potential. Raeder continued planning for such an operation and on June 20 again put the idea before Hitler, who still showed no interest.

However, at the end of the month General Jodl, chief of OKW operations staff, advocated air attacks on the RAF and the aircraft industry in Britain, supplemented by a naval blockade, as the first step towards forcing Britain to surrender, and preparations for an

# Operation Sealion — the German plans

Continuing the story of the invasion that wasn't, by Terry Wise

invasion finally got under way on July 2 when Hitler announced: 'The Fuehrer has decided that a landing in England is possible, providing that air superiority can be obtained.'

On July 13 the Wehrmacht presented plans to land 13 divisions in three days with 28 divisions in support to follow later. On the 16th Hitler issued his famous directive, Preparations for a Landing Operation against England, the aim of the landing being to eliminate England as a base for continuing the war against Germany. The operation was to be known as Operation Seelöwe (Sealion) and preparations were to be completed by August 15. On the 19th a last offer of peace was made to the British people by radio and leaflets dropped by the Luftwaffe. When this offer was not taken up preparations for invasion were given precedence over all other activities.

OKW prerequisites for the success of the invasion were:

1. The Luftwaffe to destroy the RAF and armament production which supplied it, and achieve air superiority. The Luftwaffe would also be responsible for destroying coastal defences covering the landing areas, breaking the initial resistance of the land forces, and annihilating the reserves.

It would have to destroy all main road and rail junctions and telephone centres and launch a ruthless attack on London, if possible the day before the invasion, causing hundreds of thousands of refugees to block the roads and demoralise the population as a whole.

2. The Navy to provide mine-free corridors to the landing beaches and, supported by the Luftwaffe, guard the flanks of the crossing sectors. Dense minefields would be laid to assist this plan and packs of submarines would wait off the main RN ports to ambush the Home Fleet. (Some 200 assorted vessels would be used to lay minefields and sweep corridors, taking eight to ten days to carry out the work.)

3. Coastal artillery to give fire support from the French coast and, once beachheads were established, artillery also to fire seaward from the English coast. (On September 4 the British Chief of Naval Staff warned that if the Germans could get

possession of Dover and its guns then, holding both sides of the straits, they could largely deny the straits to the RN and bring over supplies and reinforcements in vast quantities.)

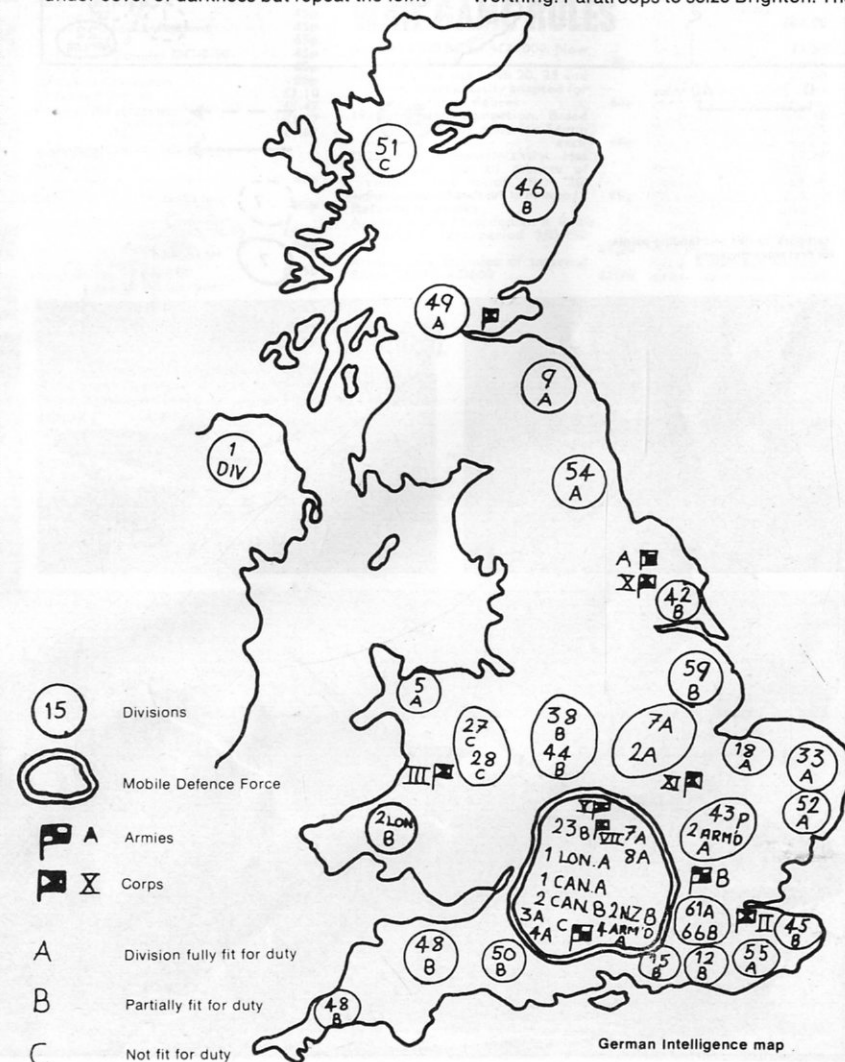
4. As far as possible the RN to be pinned down in the Mediterranean and North Sea. A major feint, Operation *Herbstreise*, to be made from southern Norway ports in the general direction of the north east coast two days before the invasion. This fleet (four cruisers and four liners) would turn back under cover of darkness but repeat the feint

on the following day. It was hoped this would tie up the battleships of the Home Fleet in the north of Britain.

5. The Wehrmacht to land strong forces in southern England, defeat the British Army and seize London.

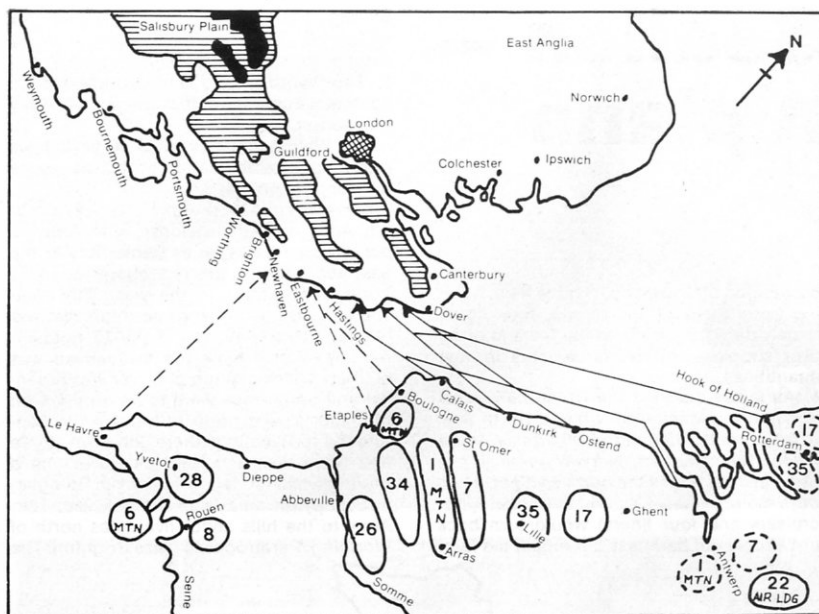
The Wehrmacht's plans were as follows (see map for embarkation ports, sea routes and landing points).

Army Group A (16th Army of ten divisions, 9th Army of four divisions). 16th Army to occupy an area as far as Canterbury to the east and the high ground, about ten miles north of Hastings, in the west. 7th Parachute Division to land on high ground behind Folkestone and Hythe to hold off reinforcements while the bridgehead was built up. Quick capture of Dover was essential and paratroops were to be dropped on the high ground north of the town to capture the fortifications there. 9th Army (three first wave divisions from Le Havre and a fourth division to follow later from Bologne) to occupy an area from the link with 16th Army to the hills about five miles north of Worthing. Paratroops to seize Brighton. The



German Intelligence map showing supposed dispositions of Home Force, September 1940. Compare with the actual dispositions shown in the map with the first article in this series. The effect of this faulty intelligence might have been loss of confidence by local commanders when they found their maps were incorrect.





0 40 Miles

High ground

Sea routes 9th Army

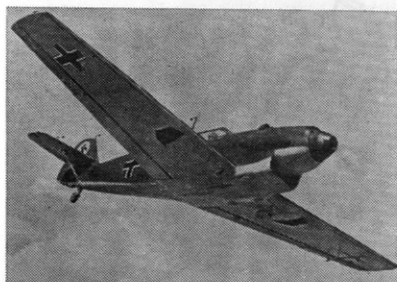
Sea routes 16th Army

Location of 7th Para Division unknown

2nd Echelon

1st Echelon

Harbours, routes and landing points for first wave divisions



first wave divisions of both armies would include small but complete units of panzer and mobile formations and some U-tanks (underwater tanks.)

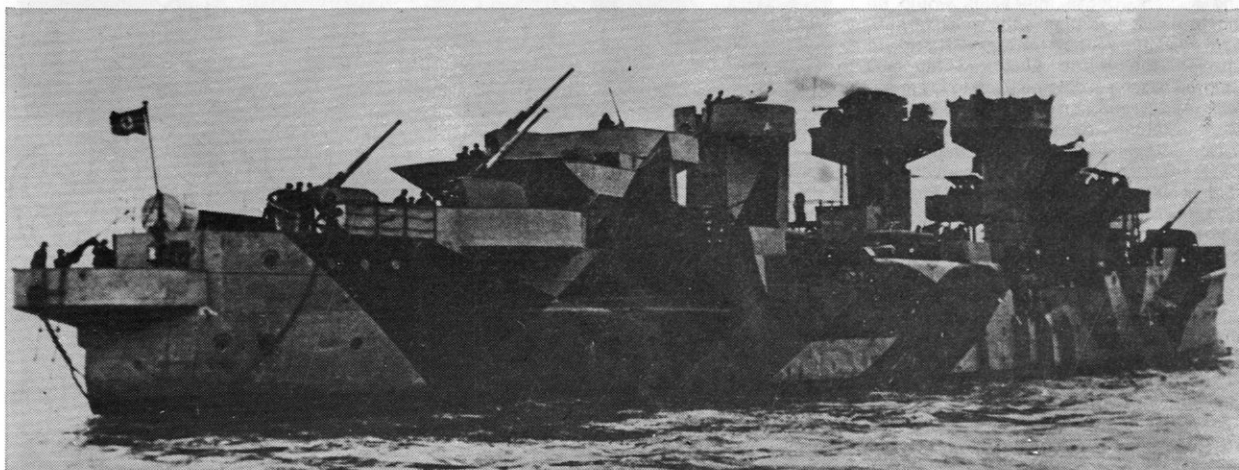
The bridgeheads seized by the assault divisions would be reinforced and expanded until after an estimated four days they formed a united landing zone. Into this zone would then come the panzer divisions, artillery and supplies, and as soon as sufficient forces had been built up an offensive was to be launched towards the Thames Estuary heights south of the London-Portsmouth line. Once this line had been reached the enemy remaining south of it would be mopped up while mobile formations advanced west of London to isolate it and capture crossings over the Thames. London would then be occupied.

If the situation in the Channel permitted, Army Group B would follow later from Cherbourg to land in Lyme Bay and occupy Weymouth. A united offensive would then be launched to advance to a general line from Malden in Essex to Bristol. Substantial forces from Norway, Holland and western France were to land between Edinburgh and Newcastle, the Wash and Harwich, and Wexford and Dungarven in Eire respectively. These would be feints only.

On July 29 the Navy pointed out that there was a serious lack of large transports and even with air superiority it could not guarantee protection of the invasion fleet from attacks by the RN. Because of this Raeder asked for the invasion to be launched against a narrow front, from Dover to Eastbourne. In addition Dover was now considered impregnable and therefore the focus of the attack should be the port of Folkestone. Newhaven would also be useful,

Continued on page 20

Left Two of the main weapons for the defeat of England, the Bf 109 to defeat the RAF and the Stuka to support the infantry in lieu of artillery. Below Anti-aircraft ship Ancona, formerly a light cruiser. A few ships like this could have eased the problems of the German Navy (photo by von Munching).



AIRFIX magazine

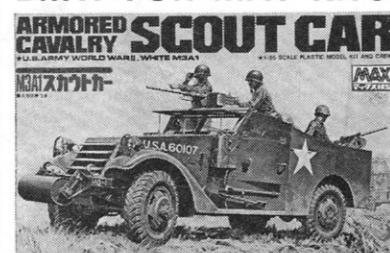


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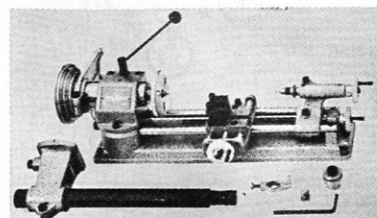
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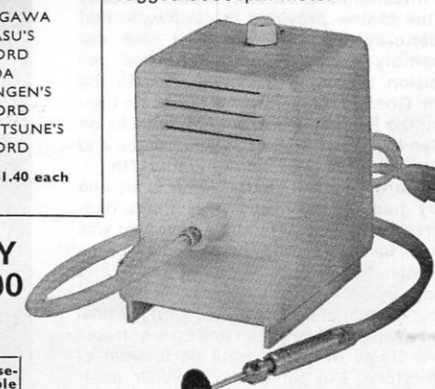
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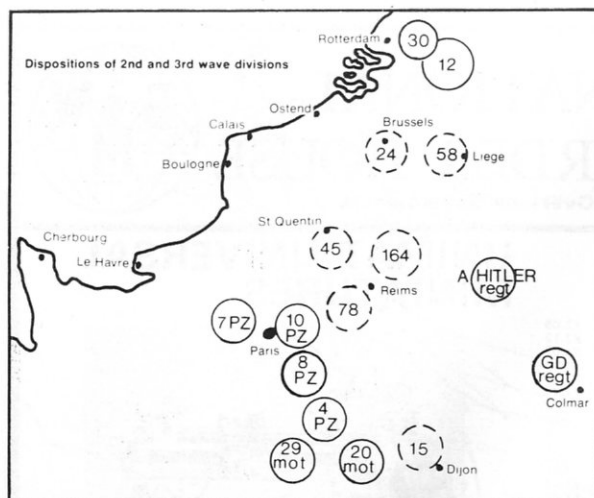


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- 12 2nd Wave  
15 3rd Wave
- mot Motorised Division  
GD Gross Deutschland

pre-war it had taken small coasters from European ports, as would Rye, where small ships such as minesweepers could unload cargo. However, a narrow front would be suicide for the Wehrmacht and it went ahead as planned, practicing landings on the French coast all through August.

On August 12 Goering launched the air battle with an attack on radar stations and fighter fields, hoping to bring Fighter Command to battle and destroy it. The RAF refused to be drawn and eventually the Luftwaffe was not only unable to destroy it, but was unable to even prevent it from attacking the invasion fleet. On September 10 Raeder reported that British bombers and minelaying aircraft were still at full operational strength but, despite losses to the invasion fleet, the Navy would be ready by the 21st — provided the Luftwaffe had superiority over the Channel and the assembly areas. Hitler postponed his decision to launch the invasion until the 14th. Goering intensified his attack on London; the RAF replied with heavy attacks on Ostend, the RN bombarded other ports, and Hitler put off his decision until the 17th.

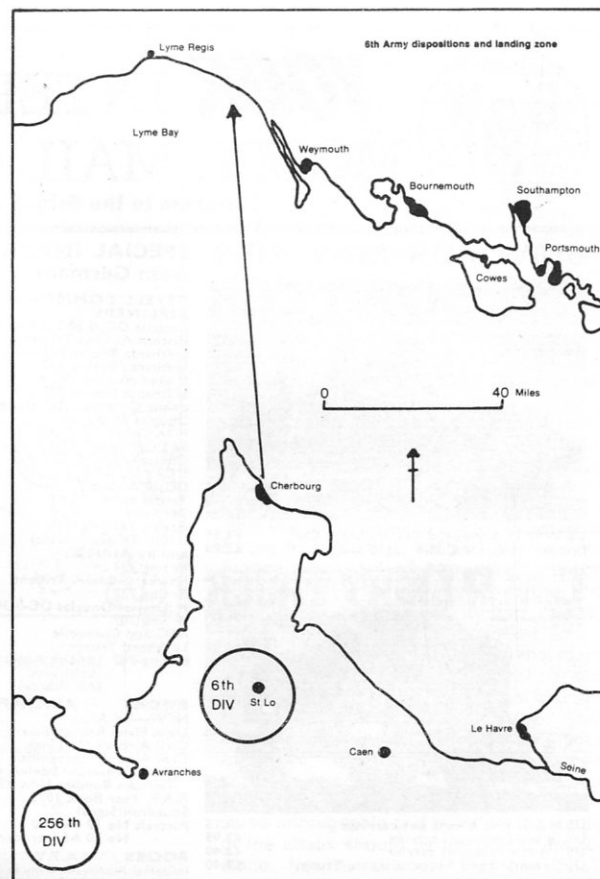
In early September the Wehrmacht and Navy had compromised over the broad-narrow front argument and a new plan was drawn up restricting landings to the area between Folkestone and Worthing. Paratroops would capture Brighton and the high ground north of Dover. On the 14th the final plan abandoned Brighton and concentrated on a single dropping zone north west of Folkestone, but on the 17th Hitler postponed *See/öwe* indefinitely and on the 20th the invasion fleet began to disperse to safer ports. On October 12 the invasion was officially postponed until the spring of 1941 but by then Hitler's mind was full of plans for the attack on Russia and the plans for *See/öwe* became just so much waste paper □

Continued  
from  
page 18

Below Practising for  
*See/öwe*, summer  
1940 (IWM).



AIRFIX magazine



## squadron codes and colours 1939-1956

By Michael J. F. Bowyer and John D. R. Rawlings

### K2 2 Group Communication Flight (c)

Post-war allocation, letters probably used on Anson XII.

K5 394th Bomb Group, USAAF (c)  
Letters used by 584th Bomb Squadron on its B-26s March 1943 to December 1945.

K5 Station Flight Pocklington (c)  
Post-war allocation.

### K7 6 (Coastal) OTU (c)

Letters used post-war by 6 OTU when based at Kinloss from July 17 1945 to July 1947. Used on Warwicks, eg K7:AH-HG115, Mosquito VI K7:MB-RF908, Lancaster K7:C-RE186, Beaufighter K7:FG-RD709. An interesting system was adopted by the unit whereby its identity letters K7 were followed by a letter denoting the aircraft type and this was followed by an individual letter. K7:A applied to Wellingtons, eg K7:AZ-NA903. K7:F applied to Beaufighter Xs, K7-H to Hurricanes, K7:L to Lancasters, K7:M to Mosquitoes and K7:S to Spitfires, eg K7:SA-TE246.

### K7 236 OCU (c)

No 6 (C) OTU became No 236 OCU in July 1951 and carried K7 until May 1951. Letters used on Lancaster GR 3s, eg K7:R-SW338.

K8 Station Flight Wymeswold  
Post-war allocation.

K9 Station Flight Tain  
Post-war allocation.

### 2K 1668 CU (c)

Formed Balderton August 15 1943 with Lancaster I/IIIs and Halifax II/Vs. Re-equipped with Stirlings in November 1943 and moved to Syerston. Amalgamated with 5 Lancaster Finishing School on November 21 1943. 2K code dates from this later period, eg 2K:L-FM169. Disbanded April 1 1945.

### 3K Unit identity uncertain

Letters known to have been carried on Hurricanes, eg 3K:B-KZ709.

### 4K Station Flight West Malling (c)

Letters used post-war on variety of aircraft including Oxford T1214:4K, Meteor 4 4K:VT185 and Mosquito T3 4K:VA893.

### 5K 437 Troop Carrier Group (c)

Letters used on C-47s of 86th Troop Carrier Squadron February 1944 to July 1945.

### 5K 39 MU (c)

Letters used on Ansons and Tiger Moth T7870:5K:S.

### 8K 571 Squadron (c)

Formed April 7 1944 with Mosquito XVIs, eg 8K:C-RV362. Disbanded September 20 1945.

### 9K No 1 Torpedo Training Unit

Used on Beaufighters, eg 9K:E-RD507. Period of use not precisely known.

### LA 235 Squadron (c)

Formed at Manston October 30 1939 and soon equipped with Battles, eg L5008, L5412. Received Blenheim IVFs in February 1940 then transferred to Coastal Command. Example: LA:P-L9324. Received Beaufighter Ics at the end of 1941, eg LA:V-T4731. Relinquished codes in 1943 after receiving Mk VIs, and codes possibly not worn by TF Xs. Mosquito FB VIs received June 1944 and code LA worn by these, eg LA:D-RS618. Squadron disbanded July 10 1945.

### LA 607 Squadron (c)

When the squadron became part of Fighter Command in 1949 its Spitfire F22s adopted unit letters LA in favour of RAN, eg LA:G-PK557. They were not carried by the Vampires which replaced them in 1951.

### LB 28 OTU (c)

Formed Wymeswold May 16 1942, disbanded October 15 1944. Used Castle Donington as its satellite. Operated Wellington 1As, Ics, eg LB:X-DV864 and Mk Xs, eg LB:B-MF637, LB:W-LP520.

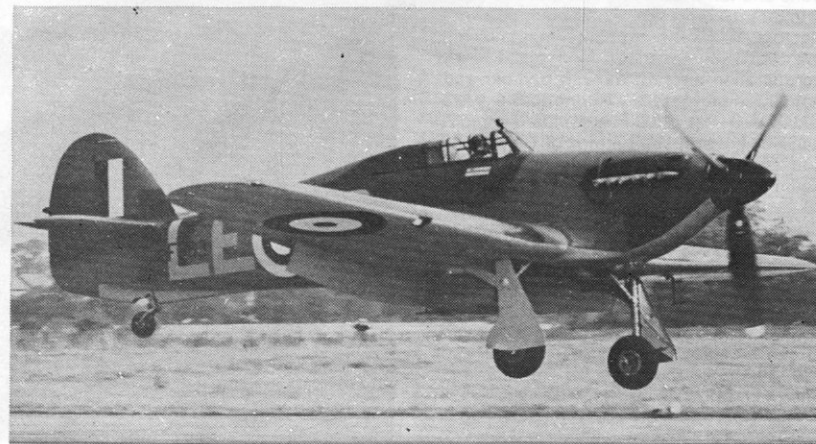
### LC 20th Fighter Group USAAF (c)

Used on P-38s (August 1943-July 1944) and P-51s (July 1944-October 1945) by 77th Fighter Squadron.

### LC Station Flight Feltwell (c)

Allocated for post-war use.

Restored Hurricane LE:D-LF363 is a fairly faithful representation of Douglas Bader's machine.



### LD 108 Squadron (c)

Letters worn on Blenheims September 1939-April 1940 before squadron dissolved into No 13 OTU at Bicester.

### LD Unit identity uncertain

Letters worn on Hudson transports in the Middle East, eg LD:N-EW947. Letters in use 1942. Identity suggested as No 216 Squadron.

### LD 250 Squadron (c)

Formed April 1 1941 at Aqir. Proceeded to Western Desert using Tomahawk IIBs, eg LD:C-AK498. LD coded Hurricane IICs used February-April 1942, then used Kittyhawk 1s, eg LD:R-ET642, Kittyhawk IIIs from October 1942 to January 1944, eg LD:R-RF321, then Kittyhawk IVs between December 1943 and August 1945, eg LD:S-FX616. Equipped with Mustang III/IV from August 1945 to disbandment JANUARY 2 1947.

### LD 100 Bomb Group, USAAF (c)

Letters carried by B-17s of the 418th Bomb Squadron March 1944 to May 1945.

### LD 30 Squadron (?)

Identity quoted as used on Blenheims of No 30 Squadron in Greece in 1941 as on LD:U-L1269.

### LE 242 Squadron (c)

Formed October 30 1939 and equipped with Blenheim IFs and Battles. It is not known whether these two types carried LE coding but Hurricane Is which came into use February 1940 were coded LE, eg LE:N-P3054. Hurricane IIBs received February 1941, eg LE:A-Z2513. Later used Mk IICs. It is not known whether LE was used by the squadron during its time in the Far East but after reforming in Britain on April 10 1942 with Spitfire VBs, LE was again used as on LE:V-BL729. Moved to North Africa October 1942 retaining LE as on Mk VC LE:Q-EF645 and Mk IX LE:R-EN370. Disbanded November 4 1944. Letters used when squadron reformed post-war equipped with Yorks and based at Bassingbourn, eg LE:G-MW298. Letters relinquished in 1950.

### LE 630 Squadron (c)

Formed November 15 1943 and based at East Kirkby. Disbanded July 18 1945, letters having been worn by Lancaster I/IIIs, eg LE:C-JB290. □





## Part 10 — Hawker Hector: last of the biplanes

TO REPLACE THE Audax, Hawker made a final effort with their Hart series to produce its final variant, the Hector. Unlike the general run of the series, the Hector had a 800 hp Napier Dagger engine in place of the usual Rolls-Royce Kestrel, which greatly broadened the nose. Aft of the engine it had a typical Hart or Audax appearance and the roundel and serial marking styles were the same as those given for late production Audax. The prototype was, in fact, a converted Audax.

It was intended that the Hector would replace the Audax in the five home-based army co-operation squadrons, Nos 2, 4, 13, 16 and 26, during 1937, for which the 78 initially ordered (K8090-8167) would have been adequate, but under the July 1936 RAF Expansion Programme, the number of home army co-operation squadrons was raised to seven with the formation of Nos 53 and 59 army co-operation squadrons on June 28 1937. Moreover, it was decided to equip five existing and newly-forming Auxiliary Air Force squadrons (Nos 602, 612-615) with Hectors.

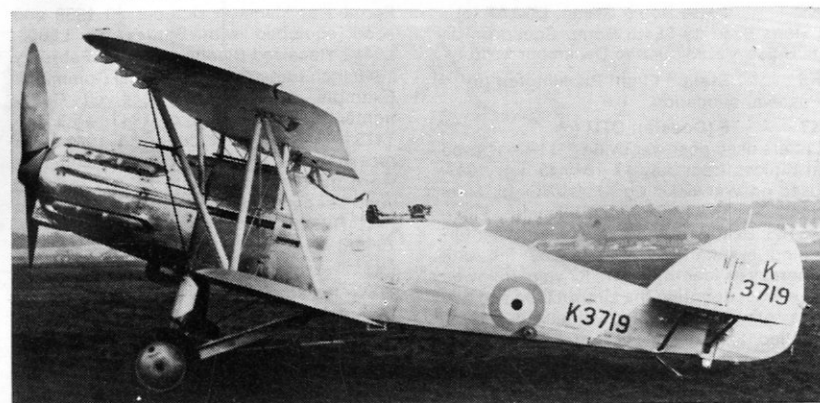
This resulted in a larger order for 100 (K9687-9786) being placed. Built by Westland in the 1936-38 period, all were delivered in aluminium-doped fabric and polished metal, with serial and roundels marked in the same way as late production Audax. There were few embellishments by units; No 2 Squadron continued to use its red triangle and No 13 used its sword badge as illustrated earlier for its Audax, but placed within a standard star surround on the fin. The new squadrons, with badges still to be decided, did not have the traditions and left their fins clear.

In July 1938, before being equipped with Hectors, No 16 Squadron was re-armed with the Westland Lysander monoplane army co-operation aircraft. As with bomber and fighter squadrons, the monoplanes were taking over, delivered in a standard camouflage of a disruptive pattern of Dark Earth and Dark Green. Plans were made to re-equip with Lysanders Nos 2, 208, 4, 13 and 26 Squadrons, and the School of Army Co-operation, in that order, between September 1938 and April 1939.

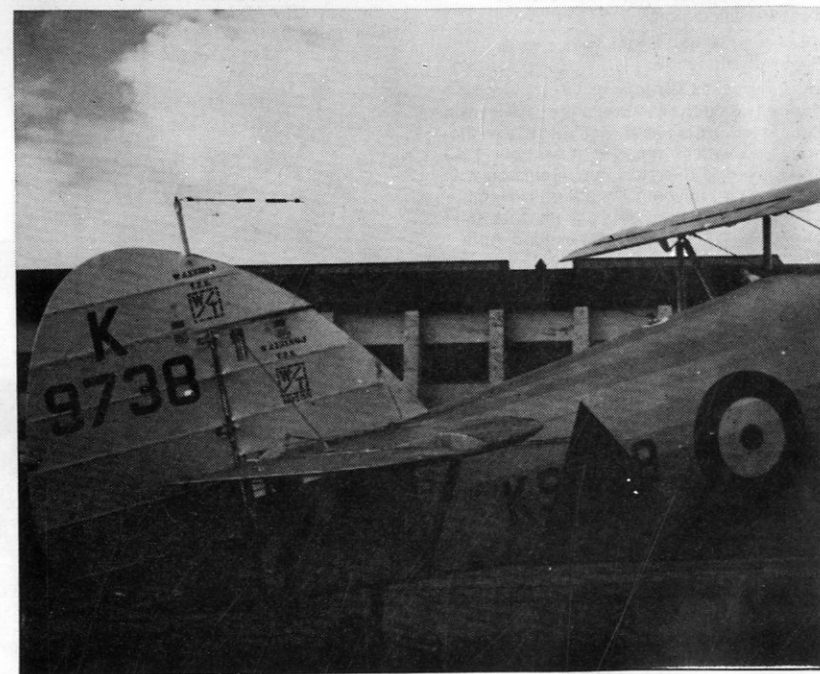
Following the Munich crisis in September 1938, Hectors were hastily camouflaged in distemper paints and later code letters applied. There were other changes, for two of the auxiliary squadrons (Nos 602 and 615) changed their role to fighting and another (No 612) to coastal reconnaissance.

The vital army co-operation squadrons were Nos 4, 13 and 53, which formed No 50

Wing at Odiham. This wing met the army co-operation requirements of Aldershot Command which contained divisions that



**Above** The prototype Hector, a converted Audax airframe, showing the standard Hector finish of polished metal on forward fuselage and aluminium-doped fabric aft. **Below** Hectors in No 2 Squadron service carried the red triangle displayed in the same way as shown earlier on their Audax. Seen clearly are the W/T bonding symbols on the fin and rudder, and the smaller characters are Westland part numbers and doping scheme markings — T2S for 'Titanine Scheme 2, sprayed'. **More photos on page 24.**



would form a British Expeditionary Force. In this way it was hoped that the squadrons would train with the army formations that they would serve in the field. All these squadrons had Hectors but while Nos 4 and 13 re-armed later with Lysanders, No 53 re-equipped with Blenheims for strategic reconnaissance. Army needs were changing and new forms of co-operation were to result. But that is looking ahead.

The year 1937 was a turning point. As the RAF expansion got under way and an uneasy peace shifted to the brink of war, camouflaged monoplanes replaced the brightly finished biplanes. Michael J. F. Bowyer will take up the story from this significant year.

AIRFIX magazine

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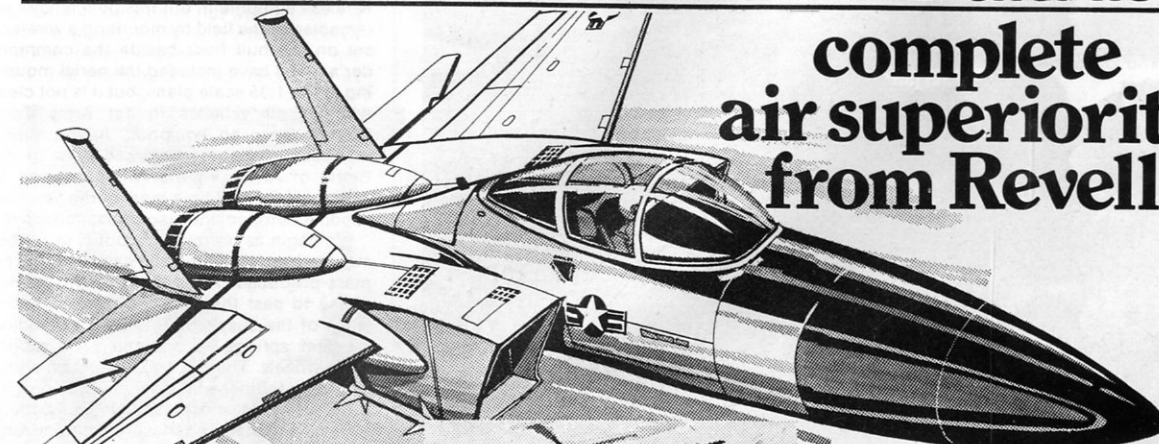
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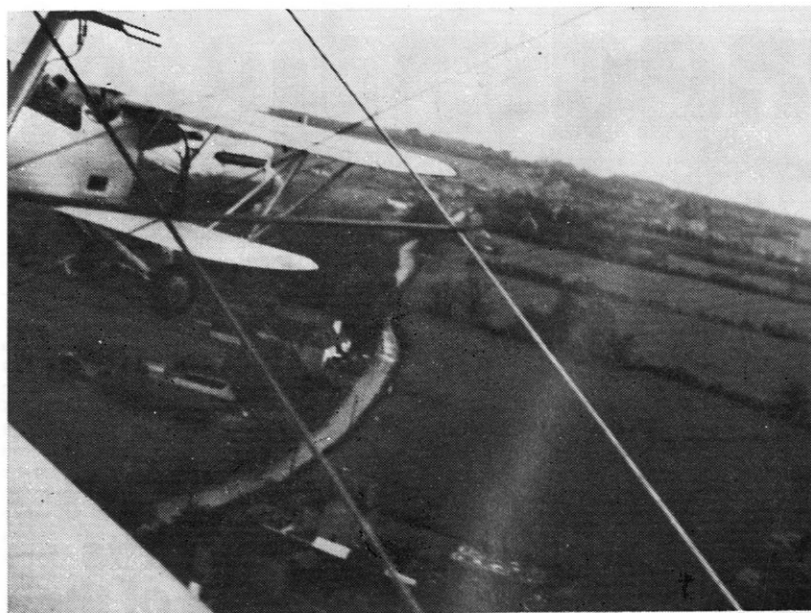
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To give you atmosphere — the view from a Hector, and how a military convoy appeared.



IN THIS MONTH'S article I will describe the construction of a model of the first of the British Infantry Tanks, known generally as the Matilda from its resemblance to a popular cartoon duck of the Thirties. Its successor inherited the name and was the tank that made it famous during World War 2.

The Mark I appeared first in 1938 and the last of the 140 vehicles was completed in 1940. Its chief virtue consisted of its 60 mm thick armour, which proved impervious to all contemporary German anti-tank guns, but it was armed only with a .5 or .303 inch Vickers MG and had a maximum road speed of 8 mph.

It formed the main strength of the BEF's 1st Army Tank Brigade in France and played a decisive role in the highly significant Battle of Arras, where the Infantry Tanks could only be stopped by the German medium artillery. However, after Dunkirk the shortcomings of the Mark I led to its replacement in service by the Mark II.

The Infantry Tank Mk I, otherwise known as the A11, was designed with a great emphasis on economy, and undoubtedly presents a somewhat antique appearance which adds to its interest as the subject of a model. The turret, for the first time in a British tank, was cast, and as only diminutive track guards were fitted the tracks and suspension are entirely exposed to view. The hull shape is, however, very simple.

The A11 is unique among British tanks of the period in the lack in the basic design of wireless equipment, but this deficiency was remedied in the field by mounting a wireless set on the hull floor beside the commander's feet. I have included the aerial mounting in the 1:35 scale plans, but it is not clear whether all vehicles in 1st Army Tank Brigade were so equipped. In the event, wireless silence was enforced prior to the Battle of Arras, so that when needed in action for the first time most of the sets had become detuned and were thus ineffective.

We begin as normal by producing rubber moulds from which plastic castings may be mass-produced. In addition to the track I chose to cast the track return rollers, the sides of the suspension units — including the leaf springs — and the solid rubber tyred wheels. The last two wheels on either side were thinner with steel rims and only by producing the model wheels individually from sheet plastic can sufficiently strong units be produced.

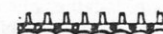
The casting of the rollers and road wheels is straightforward, but care is necessary in modelling the spring units. The master is made up from 10 thou sheet and includes two transverse lengths of sprue to form halves of the axles that carry the bogie units, but the 'necks' of the spring that support these axles will need strengthening as they carry the weight of the hull and turret.

This I did by setting in the liquid plastic with which the mould halves had been filled part of a normal wire staple, running from the axle through the neck into the broader — and hence stronger — part of the spring: the mould halves were then joined in the normal way and when the plastic had set the two lengths of staple were firmly enclosed

# Matilda Mk I in 1:35 scale

Early British Infantry Tank scratch-built from plastic card by Jeremy Broughton

within the spring. From the photographs it will be seen that this method has proved effective, and the staples are totally concealed within the casting.



The casting of the track is of especial importance in this model because of the lack of track guards. To make the master from which the mould will be taken, begin by making from 10 thou sheet a trough 1 1/4 mm deep and 4 mm wide, but before adding the sides cut a series of slots in the edges of the lower piece to give the inner pairs of holes. The treads are added from 40 thou strips, each tread consisting of a central piece cemented within the trough and a pair of outer pieces cemented to the outer sides of the trough. Now add the outer parts of each link from a strip that has previously been curved to shape by winding around a pencil and immersion in hot water, then file down the trough-sides to match the curve on these outer sections. The horns are added, and the mould is then produced as

previously described.

Because of the thinness of much of the master this track proved, of all those described in these articles, the most difficult to cast and so allowance should be made for some rejects among the castings.

The construction of the hull is begun by cutting from 40 thou sheet the two sides, each side consisting of two pieces; the lower edges of the hull are bevelled and this affects the shape of the rear and, to a lesser extent, the forward pieces.

Four pieces of 20 thou sheet are also required to thicken the hull sides within the fighting compartment; they are cut to the same pattern as the corresponding 40 thou pieces, but are reduced in width to allow a 1 mm rebate at the top and 1/2 mm at the bottom, the top plate and floor fitting into these.

Now cut a rectangle 34x23 mm for the bulkhead separating the engine from the fighting compartment, and another rectangle 54 1/2 x 34 mm, both from 40 thou sheet. The second piece will fit horizontally above the actual floor of the engine compartment to give the hull sufficient rigidity.

The floor is cut, in three pieces, from 20 thou sheet, and the side pieces are cemented to the main section; to check that

the side pieces are at the correct inclination a shallow former is added in the area that will lie beneath the engine compartment.

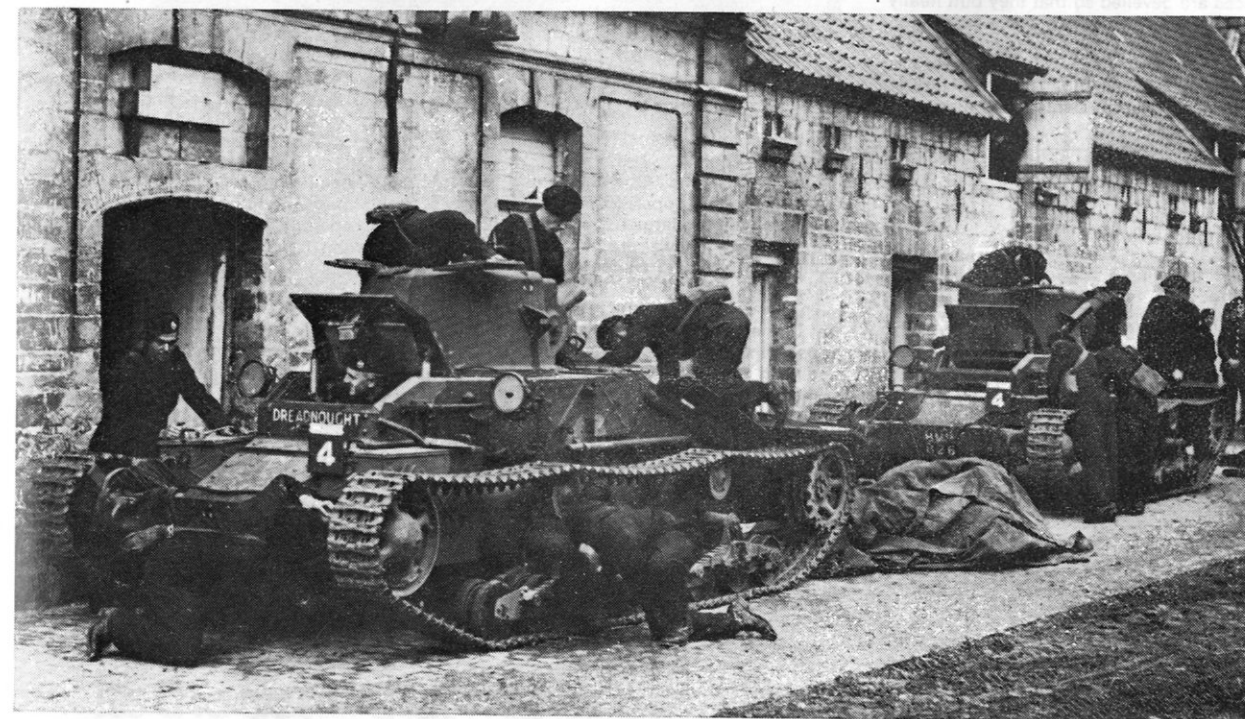
The hull is now assembled. Cement the larger rectangle at 90 degrees to the smaller then add the two rear hull sides, carefully aligned. Next add the floor assembly, followed by the forward side-pieces which will automatically be correctly positioned, and allow the cement to thoroughly harden.

The part of the hull roof that supports the turret is now cut from 40 thou sheet, removing a disc of 27 mm diameter to accommodate the turret ring. This piece is then cemented into the rebates in the top edges of the hull sides, its rear edge fitting over the vertical bulkhead.

The engine compartment covers are built up next. First the 'wells' on either side of the hump behind the turret are formed with 20 thou sheet, both the inner side and rear faces rising from the false floor of the engine compartment to the level of the hull roof with the rear faces at 90 degrees to the slope of the rear decking.

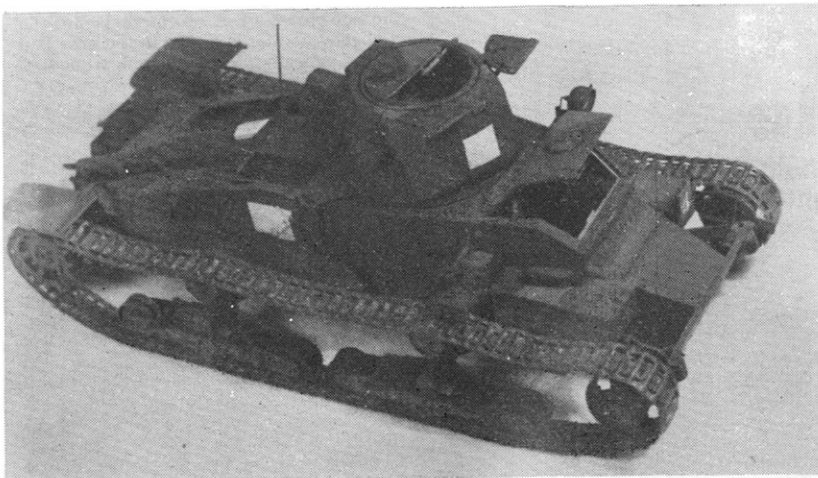
The rear hull wall is cut out next from 40 thou sheet, the height being slightly reduced to allow the adjoining sloped plate to overlap it. Cement this piece in place between the hull sides then cut from 20 thou sheet the overlapping plate, and also a bulkhead to fit at 90 degrees to the plate to seal off this transmission compartment. The overlapping plate is gently creased to fit over the top edge of the rear hull wall, and

Two Infantry Tanks Mk I of 4 RTR are seen here undergoing routine maintenance. Despite the number of crewmen visible, each tank had a crew of only two, driver and commander/gunner.



September 1975



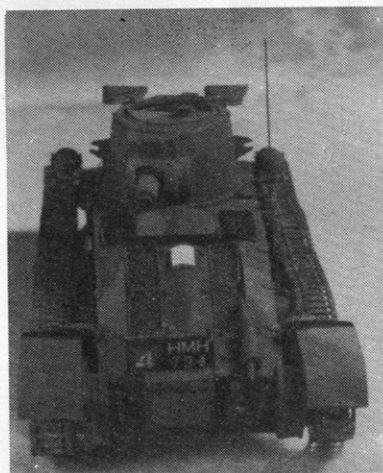


together with the bulkhead it is installed, and its outer edges filed down flush with the hull sides.

A 'spine' for the engine compartment is now cut from 20 thou sheet; it fits on the false floor between the two bulkheads and its upper edge follows the silhouette, being 20 thou lower to allow for the plates that it is to support. The spine is cemented in place along the centre line of the tank, but before the engine covers are added all interior surfaces that may ultimately be visible should be painted matt black.

The two main portions of the engine covers are now cut out, each consisting of a rectangle 13½ mm wide with the width at the forward end reduced to fit between the air intake 'wells'. The central edges of these pieces are bevelled so that they butt neatly together, and the two plates are then cemented in place over the spine; each is sloped so that its forward outer corner is level with the hull top. The three further faces of the hump behind the turret are added next.

The layout of the engine covers and mesh screens is seen, also the gun mounting. A powerful jack is fitted on the bracket beneath the silencer.



This photo shows the general layout of the tank. One drawback of the design was that the driver's hatch could not be fully raised when the gun pointed forward, so that the turret had to be traversed before the driver could leave the vehicle. The statement often made, that the turret had to be fully traversed, is false, and the hatch could be satisfactorily raised for ¾ of the turret's traverse.

Outer faces from 5 thou sheet are now added to the hull side plates. These are not embossed with rivet detail but form the step just in front of the forward column of rivets on either side. Each side has two 5 thou pieces; the rear matches exactly the rear section of the hull side and is cemented in place first, the forward edge then being filed flush with the forward section of the hull side. The forward section starts 3½ mm from the rear part and is next cemented in place. The two pairs of columns of flat-headed rivets on either side are now added. I used small discs of 1 mm diameter cut out by a paper tape punch, but discs cut from 5 thou sheet could be used.

The two flaps by the engine are now attached to the upper edges of the hull sides, and the two large housings that carry the sprocket wheels are made up from laminated sheet and cemented to the rear hull.

The forward part of the hull is now built up; first cut out the front plate, which will support the idler wheels, from 40 thou sheet and add the riveted skin. The plate is cemented squarely in position, and the glacis plate is cut from 10 thou sheet to overlap it: before mounting cement the 5 thou riveted skin to this plate and bevel the side and forward edges.

The driver's plate fits behind the glacis and between the hull sides and is made of two parts, the outer part 40 thou thick with its upper edge filed to be parallel to the adjacent hull edge, and the inner part from 20 thou sheet forming a ½ mm rebate to accept the driver's hatch. When this piece is firmly cemented in place with its front face flush with the hull sides, cement over it a 10 thou strip that covers as well the exposed edges of the hull sides. The driver's vision

slit is added from 10 thou sheet next; I found it easier to make this from several parallel strips rather than cut the narrow slit from a single piece of plastic.

The upper edges of the hull sides, from the driver's plate back to the beginning of the rear slope, are now filed down to give a bevel of 45 degrees. Starting from the front, the first slope is bevelled across the full thickness of the side-plate, for the next slope this reduces progressively to a bevel ¼ mm deep which is maintained along the horizontal section.

The driver's hatch is now cut from 20 thou sheet, shaped to fit in its place between the hull sides. If the hatch is to be modelled in the closed position it is cemented directly in place, but if it is to be open the driver's seat must first be modelled. This is suspended from the hatch by two columns, and the hatch and seat rise together when the driver extends rods from the bottom of these columns by turning two handles mounted by the seat; thus when the hatch is raised the seat is approximately 4 mm off the floor.

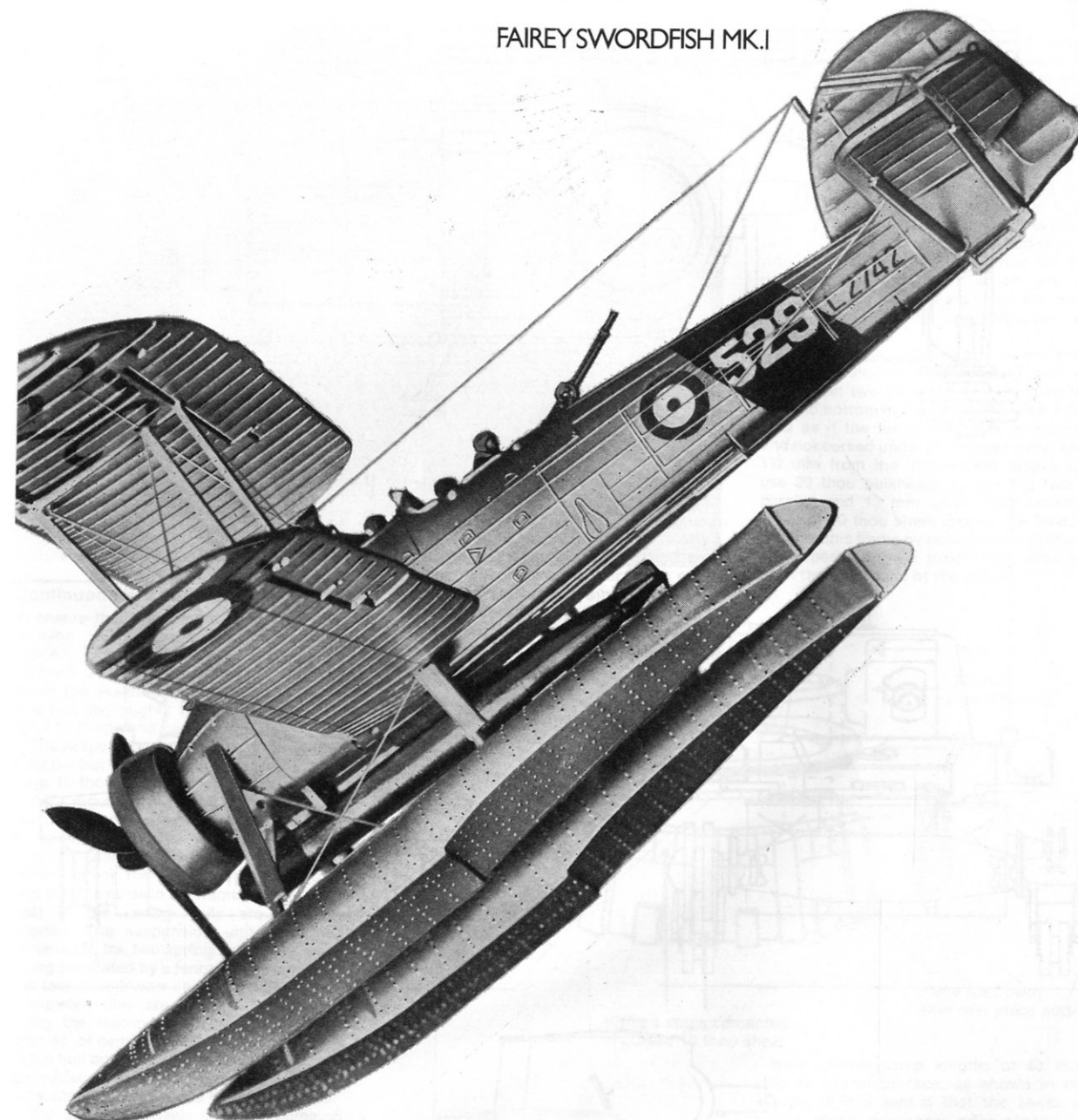
The periscope should also be added before installing the hatch: little of the actual periscope is visible externally as a leather collar — which can be modelled using body putty — is attached to the ring in which the instrument is mounted, and conceals the sides.

The idler wheel assemblies are now installed, each consisting of an inner, fixed, section of 10 thou sheet and an outer part which pivots on the inner and has a partially serrated circumference for adjustments to the track tension. A T-section girder runs diagonally to the hull side and will support a stowage bin. The stowage bins are made up from 10 thou sheet, with 20 thou lids extending slightly beyond the sides. There are three X-shaped embossings on the sides of each bin; to make these draw out a length of circular sprue to a diameter of about ½ mm, then file away ¾ of the thickness, leaving a thin strip with the required shallow D-cross section. Cement a pair of 10 thou strips on the hull side on which to mount the bin and paint the adjacent area of hull dark green, then cement the bin in place, after filing a slot in the bin to fit over the supporting girder. The idler wheels are made next. Begin by cutting four discs of 14 mm diameter from 10 thou sheet, and add rims from 10 thou strip. Next laminate the inner and outer sections of the hub, file to shape and cement in place. Four spokes are added to each disc, after which the exposed areas of the original disc can be filed away: the pairs of wheels are then cemented in place.

The bulbous castings on which are mounted the suspension units are now constructed using skeletons covered in putty. The skeleton for each is cut from thick sheet and consists of a D-shaped plate which will attach the unit to the hull, a plate mounted on the first at 90 degrees to the tank's axis and shaped to the profile of the casting, and cemented to this the two discs that will carry the suspension unit and track return roller. Before adding the putty try a 'dry run', attaching the skeleton units to the hull,

Continued on page 28

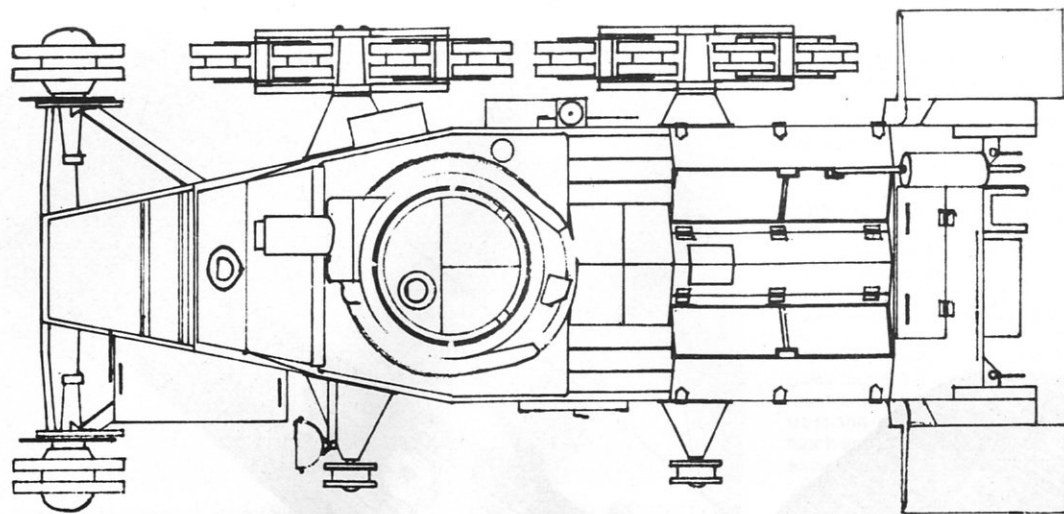
## FAIREY SWORDFISH MK.I



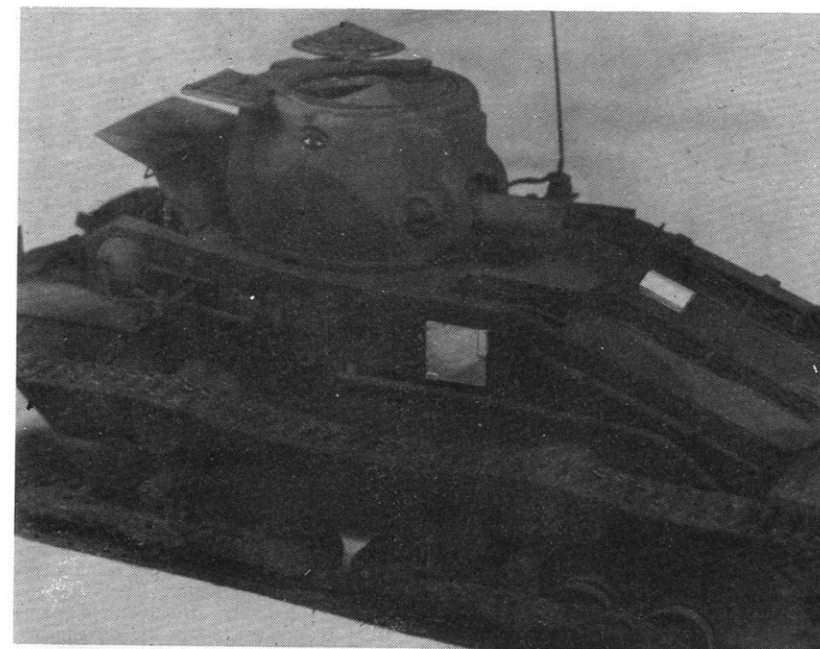
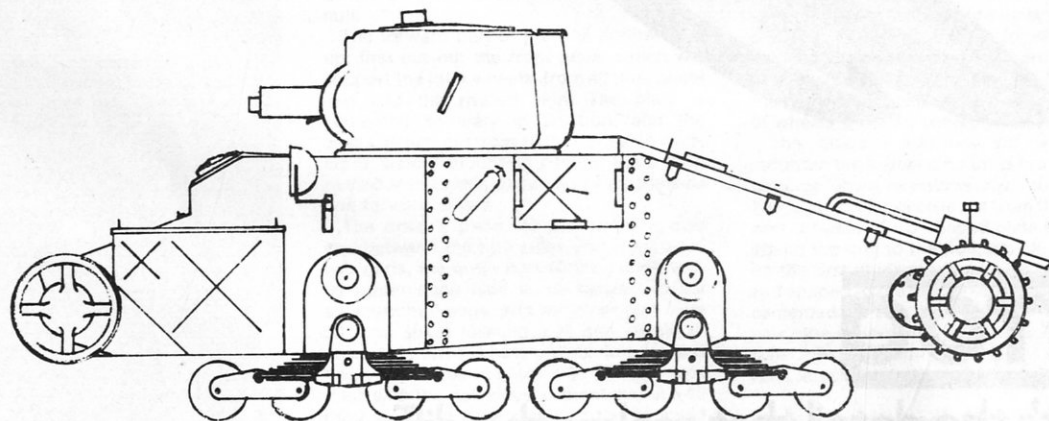
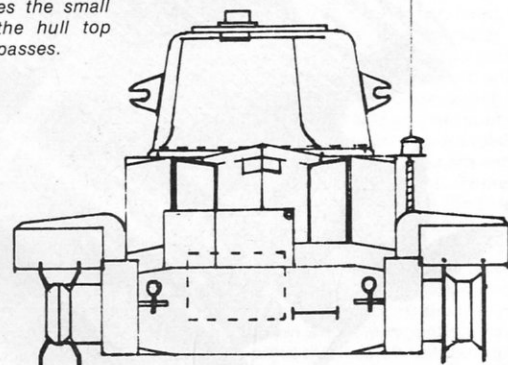
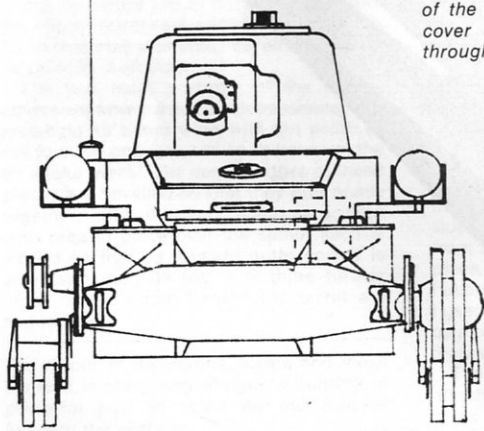
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1:35 scale plans depicting a typical Infantry Tank Mk I as it would have appeared in operation during the Battle of France, 1940. Certain details have been omitted for greater clarity, in particular the upper 'arms' of the castings that carry the left-hand suspension. The drawing on the facing page of the right-hand side includes the small cover over the opening in the hull top through which the aerial lead passes.



#### Continued from page 26

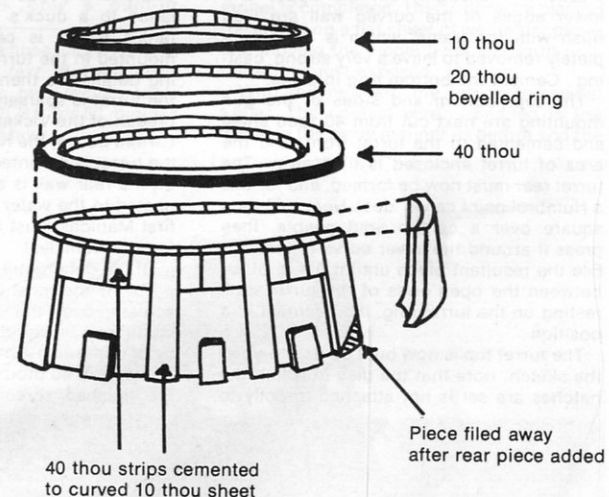
to ensure that the discs to which the suspension will be attached are correctly spaced. When you are satisfied that the finished units will be of the correct size cover the skeletons with putty and, when this has thoroughly hardened, carve and sand to shape and cement in place.

The suspension units are assembled next. First cut out the bogie frames and construct from 10 thou sheet the four 'steel rimmed' wheels mounted in the last bogie on each side. The bogies are now assembled, using an epoxy adhesive for cementing the castings into place. While the adhesive is hardening check that the assembly is square and that the holes in the frames for the axles cast in the spring units are correctly aligned. The suspension units are then assembled, the two spring castings in each being separated by a length of sprue. When the four suspension units are satisfactorily completed they are attached to the hull using the method described in previous articles, of cementing three temporary legs to the hull bottom and standing the hull on a flat surface. The track return rollers are then cemented in place above the road wheels.

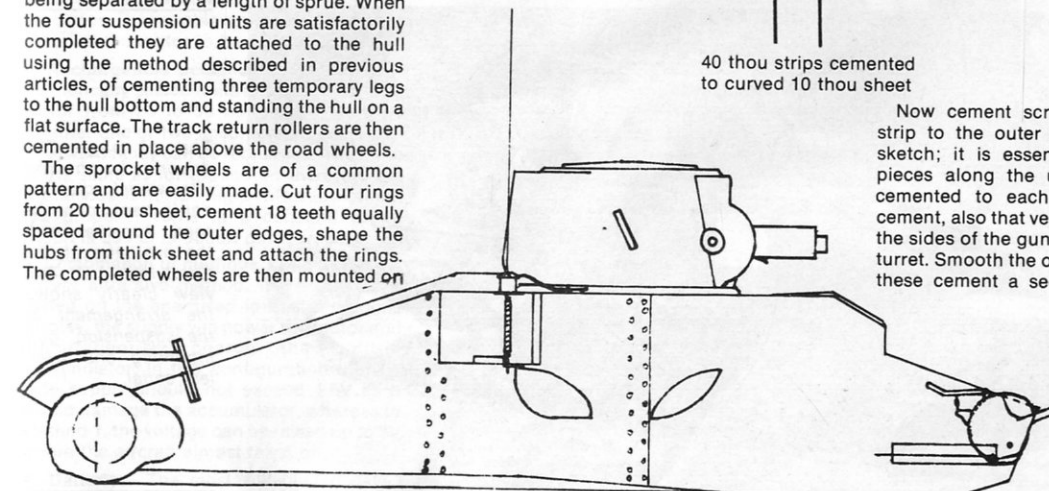
The sprocket wheels are of a common pattern and are easily made. Cut four rings from 20 thou sheet, cement 18 teeth equally spaced around the outer edges, shape the hubs from thick sheet and attach the rings. The completed wheels are then mounted on

**Above** Close-up showing the right-hand side of the gun mounting, with a plate to cover the trunnion, the layout of turret hatches and the stowage of tools on the left-hand side.

**Right** Sketch — not to scale — of the turret assembly. The framework supporting the curved 10 thou sheet is omitted. The 10 thou ring is mounted inside the bevelled ring by spacers from 10 thou strip.



Now cement scrap lengths of 40 thou strip to the outer face, as shown in the sketch; it is essential that the series of pieces along the upper edge should be cemented to each other with plenty of cement, also that vertical strips occur where the sides of the gun mounting will meet the turret. Smooth the outer surfaces, then over these cement a second piece of 10 thou







sheet to match the first. When the cement has set mix a quantity of the liquid plastic used for the castings and, with the 'turret' inverted, pour the plastic into the gaps between the two turret faces until the cavities are filled. When, after at least a day, the plastic is thoroughly set the upper and lower edges of the curved wall are filed flush with the frame, which is then completely removed to leave a very strong 'casting'. Cement the bottom ring in place.

The top, bottom and sides of the gun mounting are next cut from 40 thou sheet and cemented to the turret front, and the area of turret enclosed is filed away. The turret rear must now be formed, and for this a Humbrol paint can is ideal. Heat a 40 thou square over a candle until pliable, then press it around the lower curve of the can. File the resultant piece until it fits in place between the open ends of the turret wall, resting on the turret ring, then cement it in position.

The turret top is now built up as shown in the sketch: note that the disc in which the hatches are set is not attached directly to

the turret but a gap, presumably for ventilation, is left. The gun mounting is now completed; the concavity of the joints between this and the turret is produced by a thin fillet of body putty pressed into the angle and later filed to shape. The stubby armoured shield for the machine-gun, whose resemblance to a duck's beak gave rise to the tank's name, is carved from sprue and mounted in the turret, and the few remaining details are then added. The interior of the turret is sparsely equipped; there is the breech of the Vickers MG, with a magazine carried below, the handwheel that traverses the turret is mounted on the turret ring and on the rear wall is a water can that is connected to the water jacket of the VMG. The first Matildas must have been very uncomfortable vehicles!

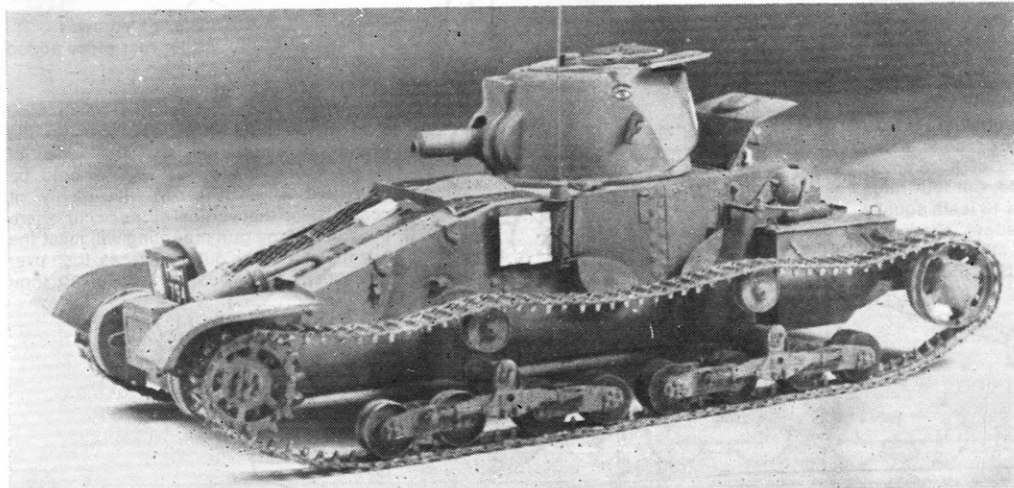
Of the details still to be added to the hull, probably the most important are the mesh screens over the air intakes. These are made from fine stretched sprue, which must be of uniform thickness. Make a rectangular frame from 40 thou strip, a little larger than the finished screen. Cement a series of

parallel lengths of sprue to the frame, at about 30 degrees to the longer sides, then add another series running in the other direction. As each length is added it is cemented to those that it crosses, but avoid using excessive liquid cement which could dissolve the fine plastic. When the mesh is complete make a frame for the screen and cement it to the mesh, then cut the completed screen from the waste portions of mesh. The screen is mounted only after the area over which it fits has been painted and, in the case of the rear right-hand screen, the exhaust has been installed.

Other details to be added before painting include the headlights, the aerial mounting — the aerial, being shorter than usual, is drawn full length — and the two small bins on the right hull wall that were used to carry a looped cable. There are also the two air inlet covers and the thin strip mounted across the engine covers behind the air

The model shown in the photographs bears the camouflage applied to the tanks of 4 and 7RTR in 1940; this consisted of irregular bands of 'Khaki Green No 3' and 'Khaki Green No 4', the latter being a very dark shade; I used Humbrol paints HD5 and HG2 respectively. The vehicle name 'DEMON' appears above the driver's slit, two civilian-style number plates are carried and four white squares are painted about the rear of the tank. Possibly these were the predecessors of the familiar red-white-red recognition sign. There are also two 'Chinese eyes', emblem of 4RTR, painted on the turret. The number 4, painted in white on a square red plate, is the unit code for 4RTR and is carried at front and rear. As was customary at the time, the front plate was held in a frame and could be reversed in the event of a breakdown: the plate and frame are made from 5 thou sheet.

There now remains only the addition of the various external stores, principally tools. In contrast to the general condition of vehicles seen in the Desert, the tanks of the BEF were kept in a very tidy state, or at least until May 1940! Thus there is little scope in this direction for improvisation, but during winter and spring there was plenty of mud and this can be modelled instead. □



**Top of page** The driver's hatch and idler wheel adjusting equipment can be seen, together with the overhang at the turret rear. **Left** This view clearly shows the arrangement of the suspension, gun mounting and wire-less aerial.

# Motorising model aircraft

Complete 'do-it-yourself' instructions for radial-engined machines from Stan Kos

PARKED INTO WIND, the Mustang P-51D looked like a tame bird of prey, engine ticking over, while his master was completing the cockpit drill. Drill completed, a call to the control tower and everything was ready for take-off. After what sounds like... clear to take off... the pilot releases brakes, full power on, now the Mustang is anything but tame. The runway begins to rush by at ever-increasing speed, slight back pressure on the stick and our Mustang starts a gentle climb. At 500 feet a 90 degree turn to port, this is where the wife entered the dining room, an amused grin spread over her face, which brought me back to earth and the 1:72 scale motorised Mustang back to the dining room table.

Whatever the reason a modeller builds his aircraft, by motorising it another dimension is added, it brings a model to life, even the pilot seems alive.

The basic motor for all the aircraft I built is the same as used in motorising 1:32 and 1:24 scale models. For most radial engine planes, the motor can be used without any further modification, as in the Westland Lysander which will be fully described. In some radial engine aircraft, the motor spindle has to be modified to accommodate the propeller, as in the Airfix Thunderbolt.

For aircraft with in-line engines, like the Mustang, Spitfire, Bf 109, the motor is put through a slimming process which is not very difficult and will be described later on.

There are four methods in which the power can be supplied to the motors:

**1. External supply** Two strips of aluminium foil are pasted to a diorama base and connected to a battery or DC supply via a variable resistance. The current is picked up from these strips with wires bedded in star-board and tail wheel which are connected to the motor. The variable resistance allows the speed of the motor to be controlled.

**2. Rechargeable accumulators** These are hermetically sealed units and will power the motor from 25 to 50 minutes, depending whether one or two accumulators are used. Afterwards they can be recharged. The price is the same as for the motor, therefore the overall cost is not too high. With this method, the propeller turns at a constant speed which is useful in action photography.

**3. Combination of methods 1 and 2** This is a very attractive method, if the aircraft is rested on the energised foils of a diorama display, the supply will power the motor and simultaneously charge the built-in accumulator. In this configuration the voltage supply should not exceed 1.5V as it would damage the accumulator, whereas in Method 1, the voltage can be raised up to 5V where the aircraft almost takes off.

**4. Batteries** The most suitable, to date I

have found to be HP7, Ever Ready MN2400 and Malory RM401H. The choice of battery is determined by the physical size of the aircraft, eg, the Airfix Halifax will take four HP7s, giving fairly long life at low cost, the Bf 110 takes two MN2400s and the Mosquito two Malory RM401Hs.

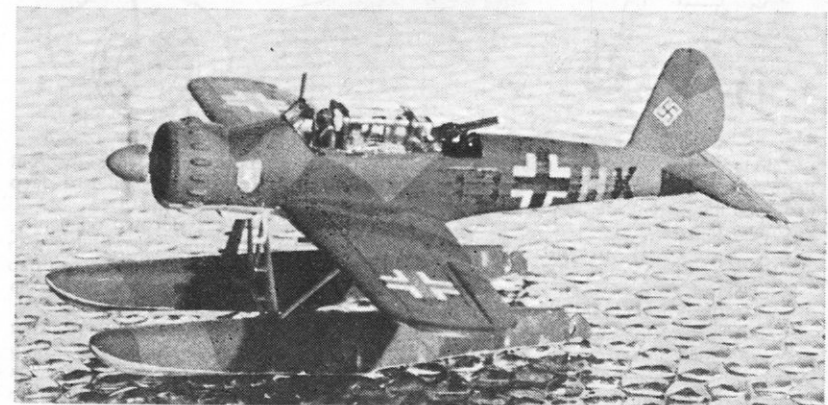
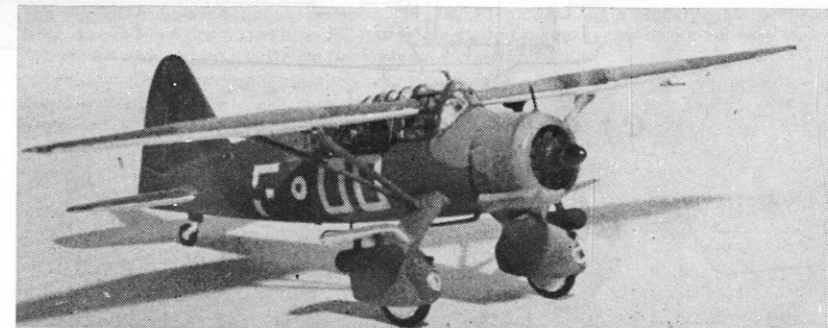
At this stage, I would like to raise one vital point, before you start building an aircraft, check whether the propeller is left or right hand (or both as in the DH Hornet) and the motors should be connected accordingly.

The first two 1:72 scale aircraft I built and motorised were the Airfix Lysander and Henschel 123. Having found it rather easy to do, I chose the Lysander old and new kits as the subject of this article. To assist the reader I shall be using a part number system as in the Airfix construction diagrams.

## Stage 1

As the difference between motorising methods 1 and 3 is only a built-in

**Below** The Lysander whose motorising is described fully in the text. **Bottom** Airfix Arado 196A3 employs two rechargeable accumulators which will last for 50 minutes (all photos by Duncan Mawer).



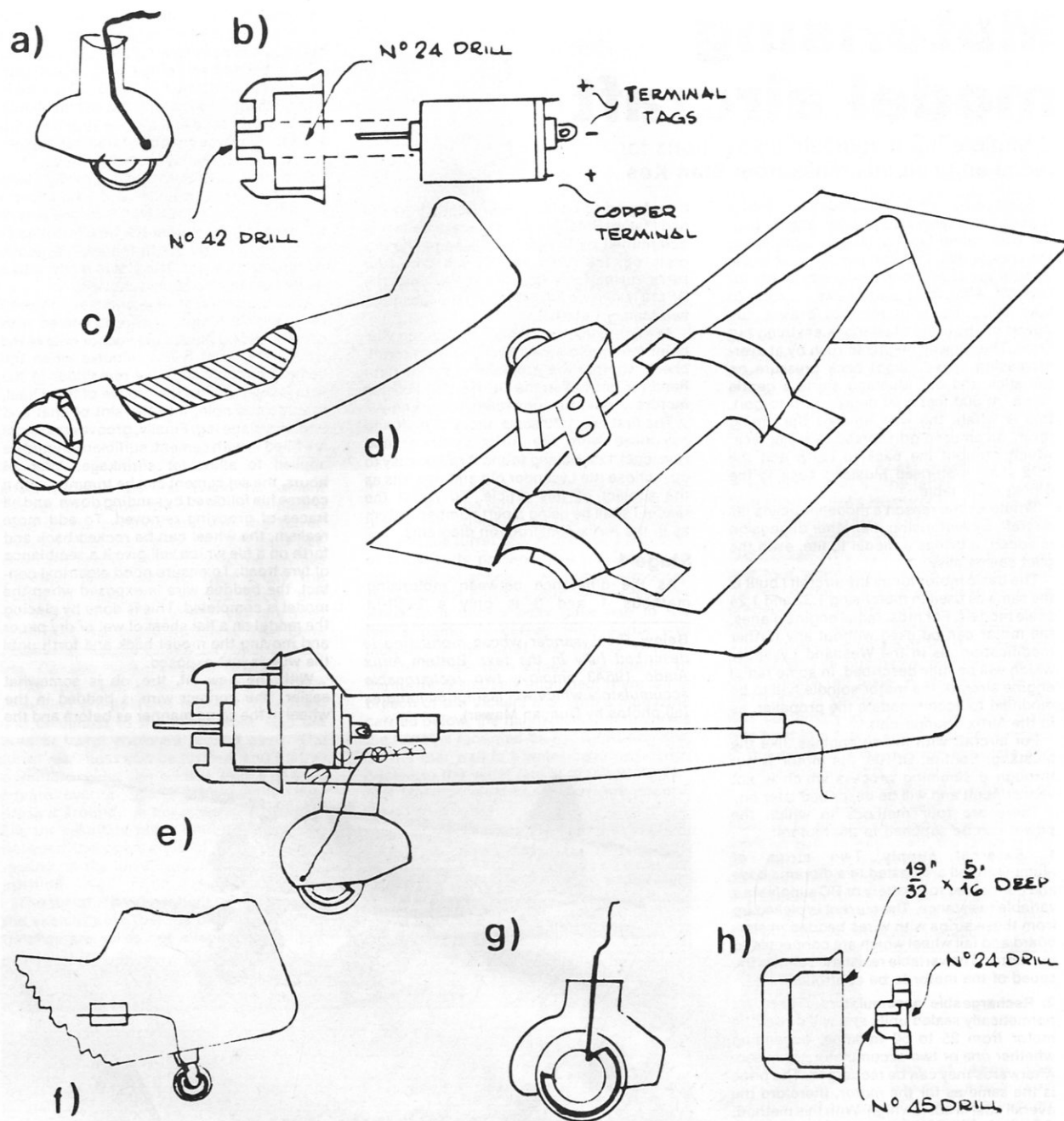
accumulator in Method 3, I shall describe the latter. In the old kit, wheel and undercarriage are moulded as one part (Part 9). The contact wire is bedded and glued with cement into position as illustrated in Fig 1a. This wire is supplied with the motors, but the insulation has to be removed first and the stranded wire twisted. Finally, a coating of solder is applied which gives it rigidity and uniformity.

The next step is to cut a groove, deep enough to take wire in the wheel. An anchoring hole is drilled (drill No 75) at one end of the groove, at the other the hole is drilled at an angle to come out in the spat, which is continued as a slot. The slot is made with a heated piece of a hacksaw blade.

With the undercarriage prepared, one end of a suitable length of wire is coated with cement and pushed in the anchor hole of the wheel, and after a few minutes when the cement partially sets, the remainder of the wire is pushed into the groove of the wheel, through the hole, into the slot of spat and undercarriage leg. Finally, grooves and slots are filled in with cement, sufficient should be applied to allow for shrinkage. After 24 hours, the set cement can be trimmed with a coarse file followed by sanding down, and all traces of grooving removed. To add more realism, the wheel can be rocked back and forth on a file which will give it a semblance of tyre tread. To ensure good electrical contact, the bedded wire is exposed when the model is completed. This is done by placing the model on a flat sheet of wet or dry paper and moving the model back and forth until the wire is just exposed.

With the new kit, the job is somewhat easier. The contact wire is bedded in the wheel in the same manner as before and the





remainder of it is locked between the two halves of the undercarriage leg, leaving about 1½ inches outside for connection to the motor (Fig 1g).

## Stage 2

In the old kit, the engine and cowling (Part 2) are moulded in one piece, which makes mounting the electric motor comparatively easy. We start by drilling out with a No 42 drill the centre hole in the engine (Fig 1b) and from the inside counterbore using drill No

24. The counterbore is a tight fit for the front bearing of the motor and should be deep enough to accommodate it.

Since the spindle is located off centre, when gluing the motor into position (with Evostick, Uhu, Bostik, etc), the widest gap between motor and cowling should be at the top (see Fig 1c).

With the new kit, the process is somewhat different. The engine (Part 13) and cowling (Part 14) are separate. The engine is too thick and because of this, would project the elec-

tric motor too far into the fuselage, so it has to be thinned down. Before this is done, place Part 13 into Part 14 and mark the location on both parts with indelible ink. The engine is cut through the cylinders with a junior hacksaw (Fig 1h), the cut cleaned on a flat sheet of emery paper. Spindle clearance hole and bearing locating hole should be drilled out as for old kit, after which the engine is glued to the motor, remembering the location mark. The cowling (Part 14) is drilled out with a 19/32 inch drill to a depth of

5/16 inch (Fig 1h), which allows the motor to be pushed further into the cowling. Now the engine with the motor can be glued into the cowling with, as before, the gap between motor and cowling being widest at the top. Care should be taken to align the motor with longitudinal axis.

## Stage 3

In both old and new kit, the blank end of the fuselage must be filed out to allow free passage of the motor into the fuselage. The locating spigot at the bottom of the fuselage must also be removed (see Fig 1c, e). In the old kit, the top and rear of the fuselage can also be removed (shaded area Fig 1c), but the panel section should be left intact as this will locate the motor during assembly. If you intend to use an accumulator (DEAC DKO-90), then the rear part of the fuselage must be scooped out to locate it as far back as possible. The scooping is done with a tool made from an old half round file with the end sharpened. It can be seen in the illustration and may I hasten to add that the damage to the left arm was not caused by a slip of the tool. The position of the accumulator in the fuselage is the same for both kits and can be seen in Fig 4.

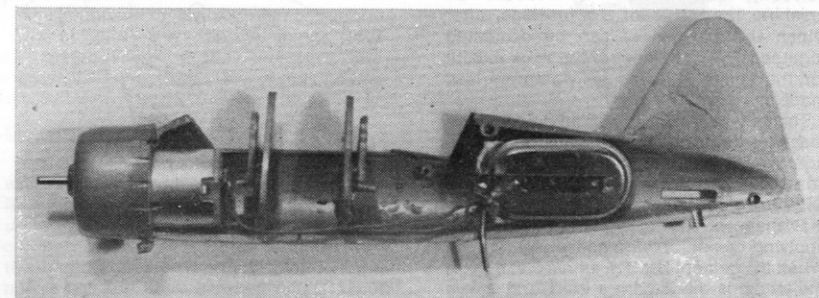
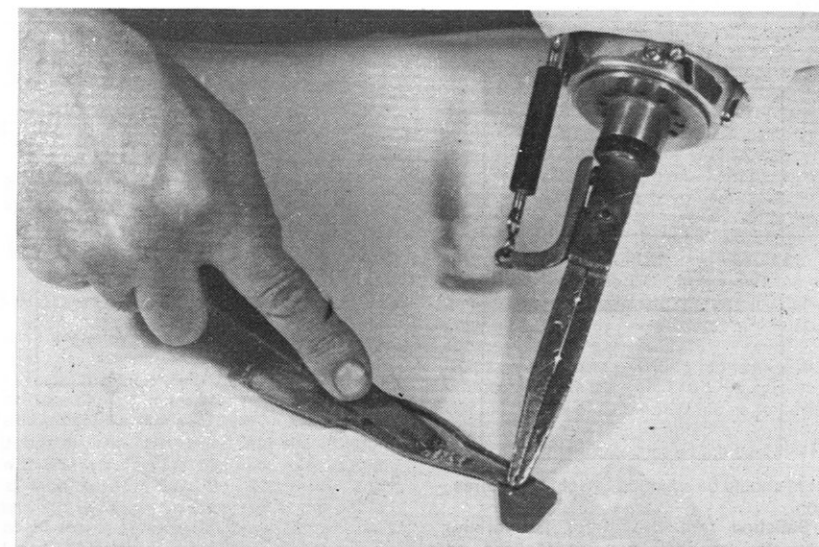
The next step is to place the right half of fuselage on a flat piece of wood holding it in position with Sellotape (Fig 1d), and cement the undercarriage with bedded contact wire. While the cement is hardening, the wheel is propped up to correct position with a piece of wood.

## Stage 4

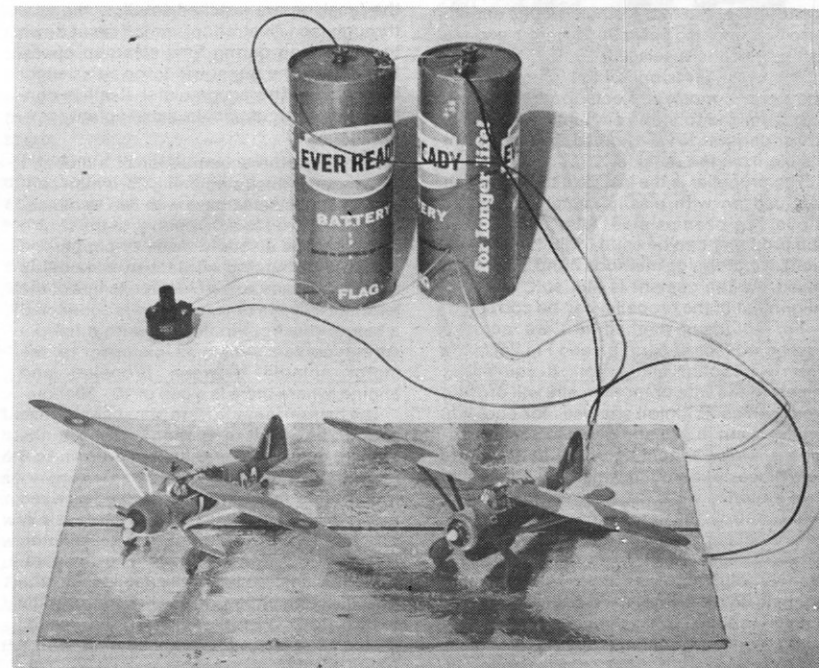
Before cementing the cowling and motor to the fuselage, I soldered a half inch piece of wire to the copper terminal of the motor (Fig 1b), which makes life easier when making final electrical connection and as the provided terminal is not used, it is therefore removed. To facilitate electrical wiring, the engine cowling is cemented at first only to the right half of the fuselage. To ensure correct alignment, the two halves of the fuselage are held together, cement applied to the right half only and the engine cowling pressed into position. Check for axial alignment.

After it has set, the left fuselage side is removed and the space between motor and fuselage packed with small pieces of plastic which are then cemented in.

Now we can turn our attention to wiring the electric motor. The contact wire from the undercarriage is connected to the half inch of wire previously soldered to the motor, or it can be connected to the provided casing terminal. If an accumulator is to be used, then its positive terminal should be connected to the same point. To the centre terminal of the motor, we solder a short length of insulated wire, the end of it being stripped, the strands twisted and finally soldered. This wire is led to the tail wheel position and to keep it in position it is taped to the fuselage (Fig 1e). The negative accumulator terminal is also connected to the centre terminal. If at all possible, all electric connections should be soldered. Now the motor can be spun round and for the Lysander, viewed from the

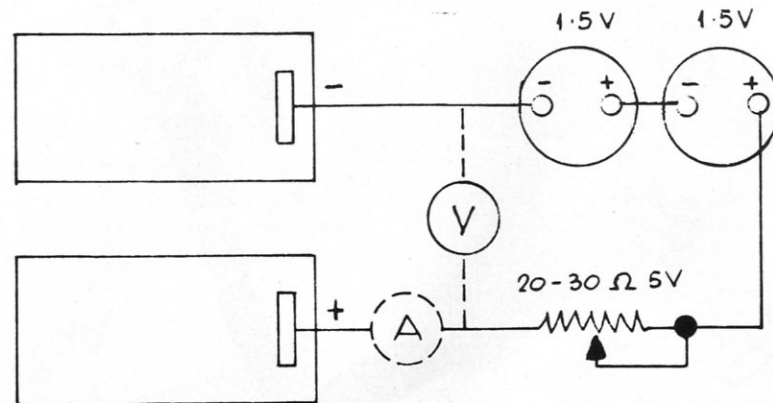


**Top Fig 3** The author scooping out fuselage shell to accommodate rechargeable accumulator. **Above Fig 4** Starboard fuselage half of Westland Lysander (new or old kit) with motor and accumulator wired up. **Below** Basic layout for method 1.





a.



front should be spinning in right hand direction.

Satisfied that the motor is working correctly, attention can be focused on finishing the inside of the fuselage, after which the two halves can be cemented together. The remainder of the work except for the tailwheel, is as for non-motorised models.

The tailwheel should be filed down on the diameter before being cemented into position. When the cement has set, the tailwheel contact wire is formed snugly around the contours of the tailwheel assembly. The original shape of the tailwheel is obtained by applying cement to wire and wheel (Fig 1f). When the cement has set, a final clean-up of the wheel is made with a knife and emery paper.

Before the cockpit canopy is glued on in the new kit, an instrument panel should be added, resting on the electric motor and so locating it at the top. A single wedge should also be cemented between the motor and the left side of the fuselage.

The Lysander is one of the 'planes where the electric motor projects too far into the fuselage, and to fit the pilot into his seat his lower part has to be trimmed, but this is not visible from the outside.

The propeller is the last item to be fitted. It is glued on with plastic cement, after the model has been painted. After half an hour the propeller can be spun (right hand direction), if motorising methods 2 and 3 are employed. As the cement is still soft, any misalignment of the propeller can be corrected.

For motorising method No 1, we require a test board (see illustration and Fig 2a) made from hardboard and tinfoil. If you speak nicely to the wife or mother, she will provide you with some tinfoil she uses for cooking, which is cut in two and glued to some hardboard. There should be a gap between the two pieces of tinfoil to which are connected two batteries via a variable resistance. This will control the propeller speed and/or charging current to the accumulator. For larger collections it is advisable to use a battery eliminator as this is a cheaper method. In a diorama display, the tinfoil strips can be reduced to less than half-pence size and suitably camouflaged.

Motorising method No 2 of a Lysander dif-

b.

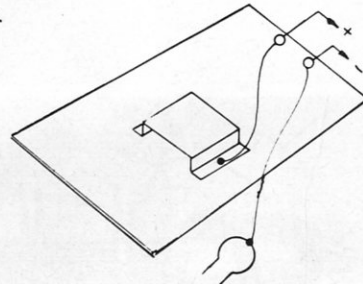


Fig. 2.

fers very little from the other two. Construction starts at Stage 2 through to 3 and 4. At Stage 4 the accumulator is prepared with a charging contact which is a length of 22 swg copper wire soldered to the negative terminal tag of the accumulator. Both halves of the fuselage are notched to allow the wire through (see illustration), which is cut down to a few thou during final clean-up operation. I hope the purist will forgive this slight inaccuracy. The accumulator itself is connected to the motor in the same polarity as in method No 3.

To charge the accumulator of a model, I use a set-up illustrated in Fig 2b, which consists of an insulated base with two terminals, which are wired to a DC supply. In the centre of the base is a saddle made of copper, on which the charging contact of a model is rested. The saddle itself is wired to one of the terminals. To the other terminal is connected a length of wire, terminating with a hairpin spring contact which is clamped to the motor spindle between propeller and engine, where there is a gap of 10 - 20 thou.

The hairpin is made from phosphor bronze spring (as used in carbon brushes), the straight sections being flattened down to 6 thou with a hammer.

The three motorising methods described in this article can be used quite successfully on other aircraft like the Gloster Gladiator, Henschel 123, Arado 196, etc. The comparatively low cost and effective realism (invaluable in action photography) is well worth the extra effort. We will consider the special problems of an in-line engine aircraft in a future article. □

ON NOVEMBER 13 1755 an Act of Parliament authorised the raising of a new Regiment of Foot in British North America. The Act stated *inter alia* . . . and whereas, for the better defence of our Colonies it hath been proposed to raise a regiment there, consisting of four battalions, each of 1,000 men each . . . The Act authorised the recruiting of 'foreign inhabitants' of the Colonies together with 'the natives'. To enable a number of the foreign nationals 'of the Protestant faith' to receive pay in the service of the British Crown it was made lawful thereafter for Dutch, Swiss and German settlers to serve in the regiment in the Americas and for certain of them, but not more than 50 at a time, to be officers. The Colonel-in-Chief had to be a natural born British subject.

In the event the cadre of the new regiment was practically all Swiss and Germans. Henri Bouquet was made commander of the 1st Battalion and Friedrich Hardiman the commander of the 2nd. The commanders of the 3rd and 4th Battalions were British, namely Russell Chapman and Sir John St Clair. The names of some of the other officers of the period give a good overall impression of the foreign nature of the regiment — Faesch, Tullikens, Wittsteen, Wetterstroom, Steiner, Lander, Rollaz, Schlosser, Kommerbach, Spiesmacher and so on.

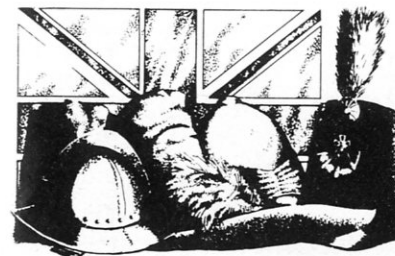
The first Colonel-in-Chief was John, Earl of Loudoun. From 1757 to 1758 the appointment was held by James Abercromby and from 1757 to 1797 Jeffery Amherst, later Sir Jeffery.

The first action in which the 1st Battalion was engaged was about Charlestown and the surrounding settlements in 1757. Later they served under Colonel Stanwix in the backwoods of Pennsylvania and in skirmishing actions along the Canadian frontier. In June and August the 2nd and the 4th Battalions were at Louisburg in Cape Breton. A further part of the 1st Battalion was employed in an expedition along the borders of South Carolina.

Some companies of the 1st, and probably the 4th Battalions, formed part of the force under Abercromby and Bradstreet which was sent to the southern frontiers of Canada including Crown Point and Ticonderoga during the high summer, and the 3rd Battalion was present under Colonel Munro at the capitulation and massacre at Fort William Henry.

In 1758 the 2nd and 3rd Battalions formed part of the expedition under General Amherst which went against Louisburg and the 1st and 4th were present when Abercromby and Lord Howe were finally defeated at Ticonderoga. Later the same year the 2nd and 3rd Battalions were among the expedition which captured Louisburg, the first time in which the regiment had the honour of serving under General Wolfe. Later the 2nd and 3rd Battalions formed part of the force which reduced Prince Edward's Island and several detachments of the same battalions were sent under Wolfe to the Gulf of St Lawrence, the Bay of Fundy, and Riviere St John's.

Subsequently, part of the 1st Battalion suffered defeat at the hands of the French



## Royal American Regt of Foot by Bryan Fosten

during the action at Fort Hannon on the Ohio River and in the early winter the 1st Battalion had men present at the capture of Pittsburg under General Forbes. The 4th Battalion was at Fort Niagara under Prideaux and the 2nd and 3rd were part of Wolfe's expedition to Quebec in 1759. Dur-

## british army uniforms 1660-1900

ing the same year the 1st Battalion formed part of the expedition which invaded Canada, the 1st were also present at the fall of Ticonderoga under Amherst, the 4th were at the capture of Niagara under Sir William Johnston and later went into the interior with Stanwix. The 2nd Battalion later fought at Montmerenci Falls and finally the 2nd and 4th Battalions were firstly at the battle of the Plains of Abraham, and later the capture of Quebec.

The regiment received its famous motto 'Celer et Audux' from General James Wolfe in consequence of the 'alertness and intrepidity' of the grenadiers of the 2nd and 4th Battalions before Quebec.

### Uniforms

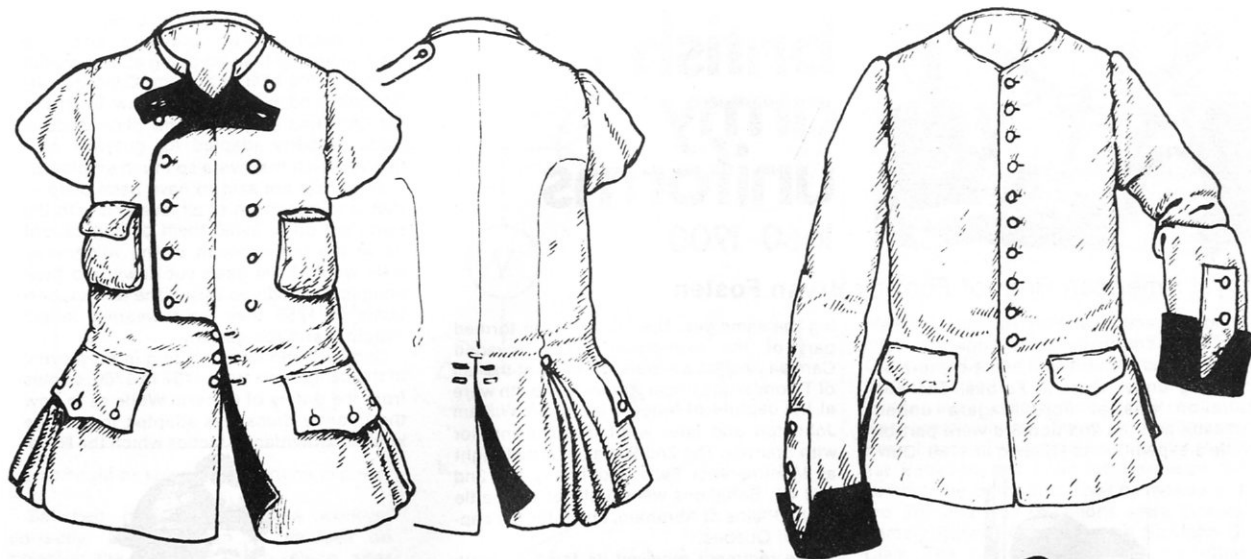
As one would expect with a regiment which was raised so far from Britain, there is little precise information about the uniform during its initial years. They were certainly dressed as a 'Royal' regiment with the traditional red coats and blue facings, but there firm knowledge finishes. Apart from a known portrait of Colonel Bouquet we have very little else to go on, at least until the 1768 Warrant which was more explicit. Therein the regiment was ordered to wear red faced blue with silver lace for the officers and white lace with two blue stripes for the men. As this follows the uniform portrayed in the painting of Bouquet which is of an earlier period it seems safe to assume that the original uniform was probably the same.

However, the officers selected for the command of the battalions were no 'spit and polish' parade ground soldiers. They were fighting men already veterans of frontier warfare against the French and Indians and there appears little doubt, from the odd scraps of information which have come to light, that they saw to it that the 'Royal Americans' were prepared for the arduous of forest warfare. The accent was to be on

**Left** An officer of the 60th Foot as he may have appeared. The coat has been divested of all lace and the skirts have been shortened. The hat has been cut down. The addition of a brown or green cloth turban was a popular embellishment. The officer's waistcoat has been exchanged for a private's. Again the lace has been removed. The legs are covered with brown canvas leggings. The officer is armed with a fusil and tomahawk. **Right** A private man wearing the uniform as described in the text.







Americans had to utilise. The orders describe how the sleeves of their coats were put on the waistcoats. Instead of coat sleeves they had wings 'such as were worn by the grenadier companies but made somewhat larger and rounded so that they reached about halfway down the man's arms'. No lace on the clothes but the facing colour lapels retained. Two pockets formed in the coat on the breasts from leather to take the musket balls and his spare flints. The pockets had a flap of red cloth on the inside so that the balls did not run out when he fell or had to lie down quickly.

The soldier carried his knapsack high on his back on a strap of web, no doubt decorated Indian style. The cartridge pouch was carried high under his left arm and the powder horn on the right on a web strap. The canteen was carried under the knapsack and was covered with cloth. He carried a tomahawk, probably in a leather case, hung from a waistbelt in a 'frog' under the coat and over the waistcoat. No bayonet was carried.

The aforementioned Indian 'leggings' were strapped under his shoes like the spatter-dashes, and his hat was cut down so that it resembled a 'cap with a flap buttoned up and with two cloth flaps on the sides to fold down and fasten under his chin'. The cap is said to have 'looked like the old velvet caps in England'. It is not known whether all the 60th were dressed in the like fashion but it seems very likely from the nature of the services of the battalions already set out that they would.

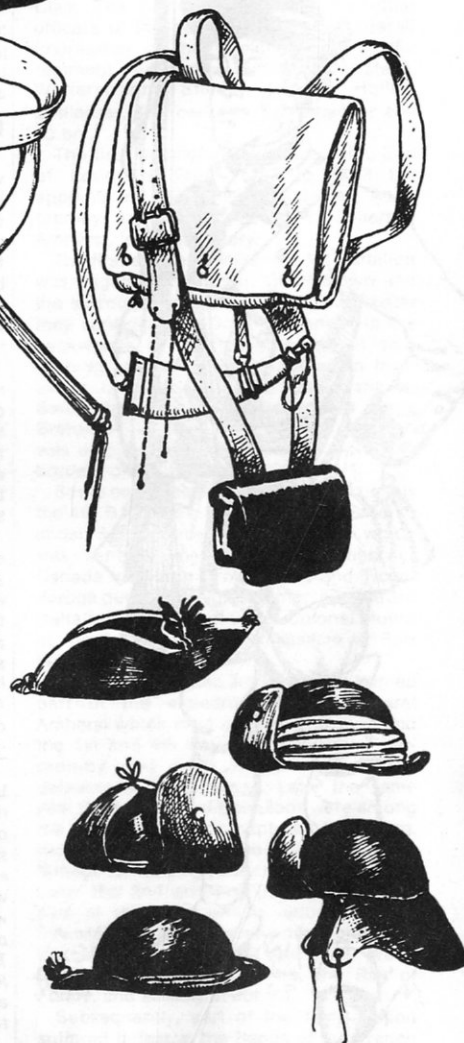
The first Light Infantry company proper was formed at Albany in March 1759 and one sergeant, one corporal and 12 privates from each company were drawn to form it. However, as 'rifled fusils, steel ramrods and bayonets with scabbards and special bullet moulds' had been issued to the 1st Battalion at least a year before, it seems possible that they were already forming themselves into an élite force even then.

During the forest campaigning the officers and sergeants carried fusils as well as the

**Top left** The coat with the sleeves removed and with the addition of cloth wings. The skirts have been cut down and pockets of soft leather have been sewn on to the breast. **Top right** The waistcoat with the sleeves from the coat attached. All lace has been removed from both coat and waistcoat. **Above right** A light infantryman's equipment. Most of it was locally made or adapted from regulation materials. **Right** The usual three-cornered hat of the period with variations. In some instances leather caps were made up locally which appeared to bear close similarity to those shown in the sketch. Adornments such as coloured turbans, feathers and cords soon made their appearance.

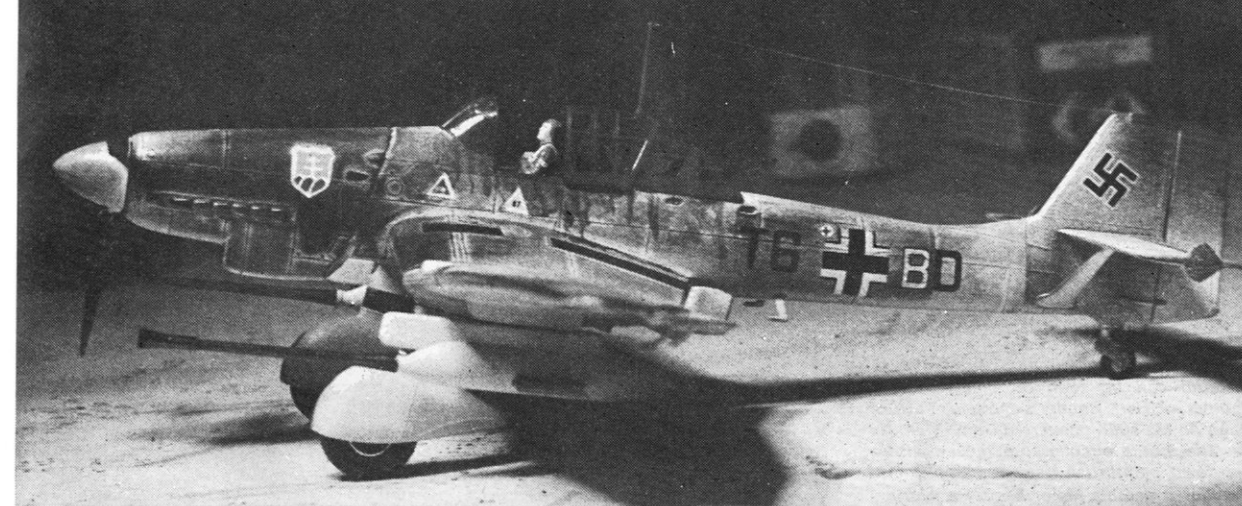
men to avoid the cumbersome problems arising from wielding partisans and pikes in the dense bush.

Sources: Regimental Chronicle of the 60th; *Journal of the Society of Army Historical Research*; *Historical Journal of the 1757-58-59 and 60 Campaigns*, by Captain John Knox; Volume II, *History of the Uniforms of the British Army*, by C. C. P. Lawson; *Journal of the Guild of Military Antiquarians*.



AIRFIX magazine

## Luftwaffe camouflage



### How to achieve realistic camouflage effects on your models described by Bryan Philpott

REPRODUCTION OF German camouflage on models presents no more problems than that of any other nation except perhaps in one respect, and that is, the obtaining of an authentic look on aircraft that carry a mottle or wave-form pattern.

The necessity to apply paint over a clean surface and the best types of paint and brushes to use, have all been covered in Airfix Magazine Guides 1 and 2, and the reader should be well familiar with this aspect of modelling so it will not be dealt with again except to emphasise that any model can only be as good as the basic workmanship will allow and paint will not cover hurried or poor attention to the basic construction.

Once the construction work has been completed and the basic scheme decided upon — a decision that really should have been taken before construction commenced — a matt white undercoat should be applied as this helps to highlight any areas that need further rubbing down as well as giving more depth to the final finish. This should be applied thinly using two coats if required and allowed to dry really hard before any further work is attempted.

Any coloured areas such as yellow fuselage bands or nose cowlings should now be given a coat of the appropriate colour and when this is dry the area concerned masked out with masking tape.

Light colours of the final scheme, such as the light blue undersurfaces, must be applied first and followed by the next darkest colour. When this is dry the splinter

pattern can be marked very lightly with a soft pencil and the appropriate areas painted in the darker colours.

This is all very basic and will be obvious to most modellers but it should be stressed that in most cases where splinter is applied the demarcation line between colours was a hard one and a faint pencil line helps to guide the paintbrush along a straight and true course. In many cases it is much better to use masks cut from thin card or masking tape and these can be made from the drawings in my book. This will ensure that a complete set of identical patterns are available and can be kept for use over and over again if many Luftwaffe aircraft are to be made.

The biggest problem comes when the mottle finish is attempted. There are many ways of reproducing this and by far the best, and in this writer's opinion the only satisfactory way, is the use of an airbrush. How-

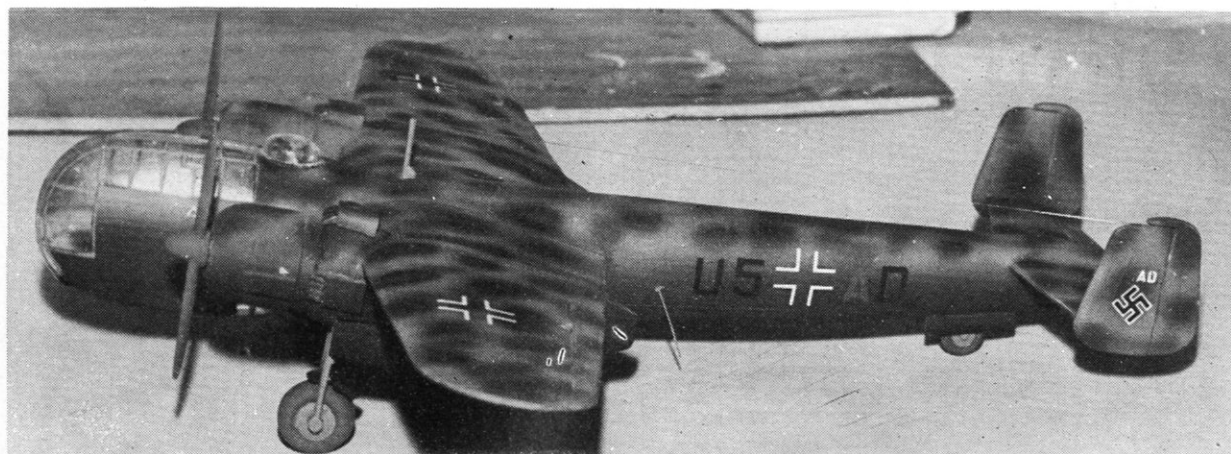
ever, although this instrument is becoming very popular and readily available, it is still beyond the reach of a vast majority of modellers.

Those who do not have an airbrush must use an alternative method or confine their activity to models without the style of finish that can be achieved with one. There are many ways of reproducing a mottle finish and among them is the use of a small piece of sponge. This method must be used carefully and it is best to practice on scrap plastic or an old model before committing paint to a model on which many hours may already have been spent. After applying the basic colour dip the corner of a small piece of sponge in the basic mottle colour and gently dab it where the main mottles are to appear. Do not use too much paint and try to keep the mottled spots an equal distance from each other. Smaller mottles are then applied in the same way in the areas



Henschel Hs 123 modelled from the Airfix kit and beautifully finished by Herr Paul Roeder.



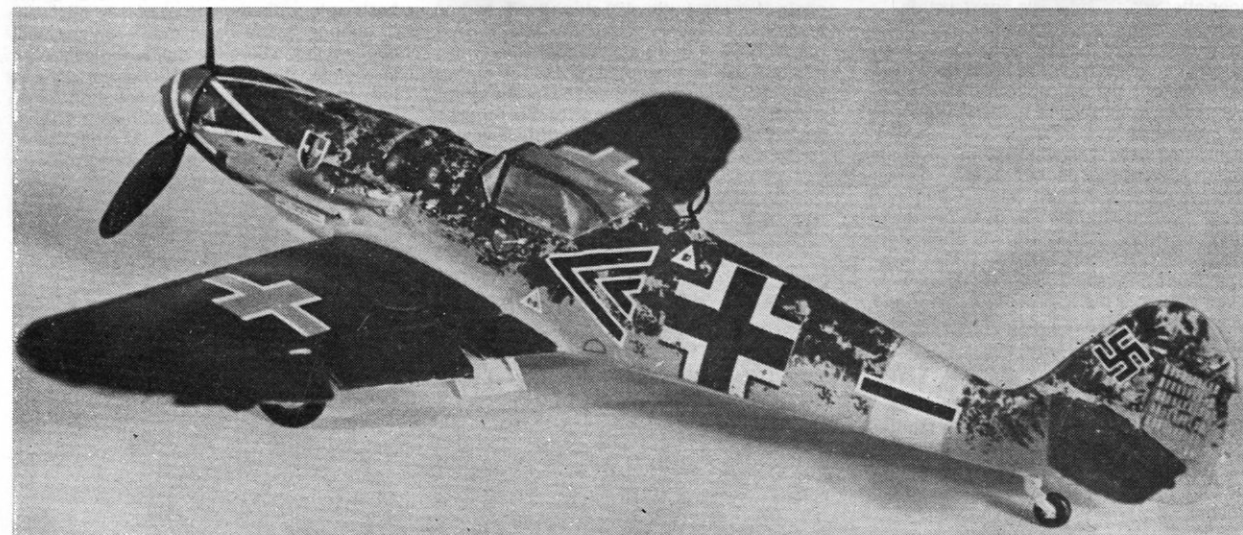


Above A modified Airfix kit depicting a Do 217K in mottle camouflage. Right Superb painting can be seen on this Me 109G, another of Herr Roeder's models. Foot of page An Me 109K converted from the Airfix kit. The mottle effect was achieved with a cut-down paintbrush used to stipple, and the model depicts Major Erich Hartmann's machine as featured in Bryan Philpott's new book Airfix Magazine Guide 10: Luftwaffe Camouflage of World War 2.

between the larger ones and should merge together at the top line of the fuselage or where they disappear into the top decking splinter.

With careful application and a great deal of patience a passable mottle can be achieved, but it is very easy to overdo it and caution must be the watchword. Paintbrushes with their hairs cut down can also be successfully used by applying paint in a 'dabbing' action, once again using a coloured drawing or photograph to obtain the correct amount of merging of the colours involved.

Another way to achieve this style of finish



is to lay a tissue handkerchief over the area that is to be mottled and dab the sponge or cut-down paintbrush through this, the weave of the tissue helping to achieve an irregular mottle, but once again it is a delicate operation that calls for experimentation and lots of patience.

If an airbrush is available it will prove the ideal answer, but it is no use expecting it to be successful first time and must be fully mastered before it is used to produce this type of camouflage.

Assuming that one can be used the best is the type that has a lever that controls both the amount of air and paint that is exhausted through the nozzle. To use one of these it is only necessary to find the position which allows the minimum amount of paint to flow then gently depress the lever that regulates the air flow, the result will be short, sharp bursts of paint that form their own mottle as they hit the fuselage or other surface of the model. The technique is to decide where each mottle is to appear then apply each one by a short blast of air, shutting it off almost immediately it is applied and moving the brush to the next spot before repeating the process.

Once all the mottles are in position, a very fine spray is used to merge them into the base colour, and the final result is achieved by respraying the base colour into the lower sections of the mottle camouflage. This technique is applicable mainly to fuselages, wing and tailplane surfaces usually having blotches of colour rather than merging mottles.

Even the simplest airbrush, that does not have fine control over paint and air flow, can be used in conjunction with a suitable mask. This should take the form of irregular shaped holes in a piece of thin card and the paint is sprayed through these on to the area that is to be treated.

It cannot be stressed enough that any of the methods detailed must be tried first, not only to get the correct paint consistency but also the 'feel' of the airbrush and 100 per cent confidence in handling the controls.

Wave-form camouflage can be applied with a very fine brush making sure that the paint is thin enough to flow freely and that the brush is kept at approximately the same distance and at the same level while the continuous line is painted. Once again the airbrush takes a lot of beating and those with adjustable nozzles can, in the hands of a skilled operator, be used to draw a line as narrow as 1/32 inch. The airbrush is set at the correct setting then used to apply the wave-form in a steady continuous movement over the whole area concerned.

The application of winter camouflage, which, as explained in my book, was a water soluble paint applied over normal camouflage, can also be very difficult but if done correctly will produce an unusual and attractive model. If a normal paintbrush is being used, a soft No 6 is about the best, and the white paint should be applied thinly in one direction over the whole top surface of the model. Areas around the national markings where the normal camouflage shows through are achieved by removing the white paint, before it has dried, with another paintbrush, or stippling

## Airfix Magazine Guides on war

### No 9

## Ancient Wargaming

by Phil Barker

Written by perhaps the best known figure in the ancient wargaming field, this is a fascinating introduction to the hobby. The book explains in detail how to enact tabletop battles using the Wargames Research Group's standard ancient rules, and there is advice on choosing and organising a basic army. The organisation of a wide variety of ancient armies is then discussed, including Greek, Roman, Egyptian, Byzantine, and many others. Ideal for anyone wanting greater realism in their games. £1.20 net (£1.33 by post).



### No 10

## Luftwaffe Camouflage of World War 2

by Bryan Philpott

A highly detailed guide bringing together all the different paint schemes of the Luftwaffe's fighters, bombers and other aircraft. There are extensive notes, photos and drawings of national insignia, unit emblems, 'kill' markings, etc, together with the camouflage used on all fronts. Many of the schemes are related to available kits, and advice is given on achieving authentic model colour schemes. £1.20 net (£1.33 by post).

Both 64 pages, 8 1/2" x 5 1/2", fully illus. September 11.



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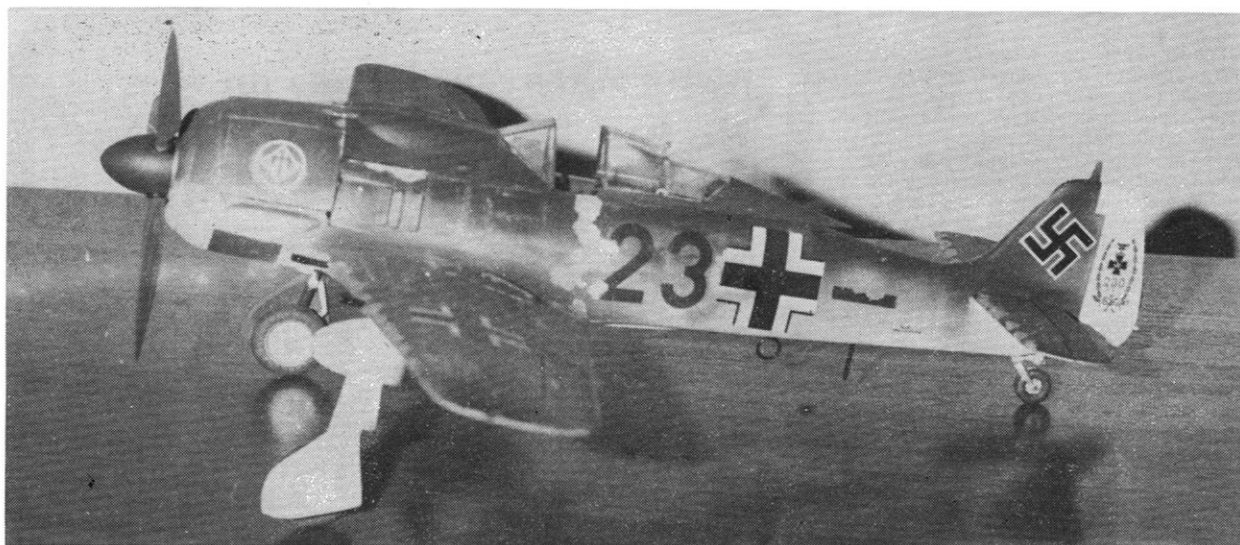
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them in, after the paint has dried, with the original base colour.

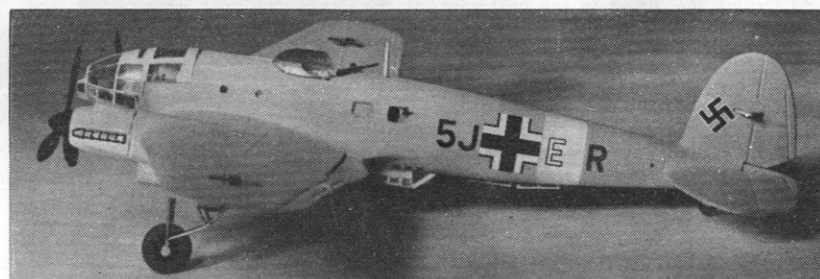
If an airbrush is used all that is needed is a mix of thin white paint which is gently oversprayed from about 9 inches. In areas that are completely covered in white, several passes will be needed, but in areas where the original finish is to show through only a very slight suggestion of white will be sufficient.

Whatever equipment is available to you, the application of Luftwaffe camouflage can be achieved with great success if care is taken. Before starting to paint any model it is worth spending some time studying drawings and photographs of an aircraft that has the finish you are trying to achieve. By working out in your mind how you will reproduce the finish shown, then carrying out experiments on scrap plastic or a discarded model, the various ways in which Luftwaffe camouflage can be reproduced will quickly be mastered, with each success leading to even greater ones.

The variety of markings available to the modeller are so great that it would be impractical to go into them here. Micro-scale, Squadron Letraset, and Modelmark, to mention just three, produce whole ranges of Luftwaffe unit badges, Staff markings, and national insignia, while Model-decal, ABT, Yeoman, and others produce sheets for individual German aircraft. With such ranges available it would be easy to overlook markings supplied with kits, but these are getting better all the time and in many cases parts from a variety of them can be combined to produce a set of markings for an aircraft other than the type covered by the original kit.

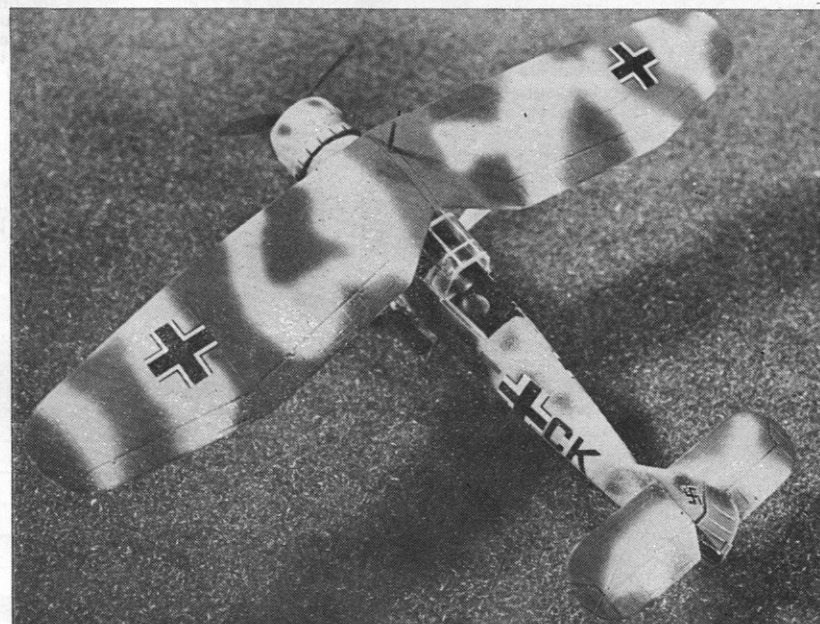
The symmetry of the national insignia lends itself to hand painting, especially on 1:32 and 1:24 scale kits, and is not too difficult in 1:72 scale. It certainly produces a truly authentic finish, and the cutting out of a series of masks using the drawings in my book is not difficult and they can of course be used an infinite number of times.

Apart from some of the schemes seen on



modern day jet fighters, Luftwaffe aircraft offer the serious modeller a range of finishes that enable a colourful and historic collection to be accumulated, and provides a modelling activity that can easily become an obsession. □

**Top** Weathered FW 190 of Major Heinz Barr. **Above** He 111 in desert scheme, airbrushed in light blue and sand with black markings. **Below** Henschel Hs 126 showing again the very realistic effects which can be obtained through the use of an airbrush.



AIRFIX magazine



WHILST THE NAMES of Paris and Farnborough are famous with the aircraft fraternity, the name Satory is famous with the armoured fraternity. Every two years, early in June, the French government and the French arms manufacturers hold an exhibition at Camp Satory, near Paris. This year it took place between June 9 and 13. Because of the nature of this exhibition, the general public is not admitted.

There are three main parts to the display. First there is the static display of all current armoured vehicles, trucks, trailers, cranes, bridging equipment and so on. Second there is the indoor display, and there are two of these, one for radar and communications equipment and the other for munitions (ie rockets, small arms, mortars, grenades and so on). The third part is the actual demonstration itself, which takes place in the afternoon. This consists of both a road section and a cross-country section, and some of the vehicles are put through their paces. This year, however, it was a very hot and dusty day and on occasions one could hardly see the vehicles for dust! After this, the amphibious vehicles show their capabilities in the large water tank. Due to range

## Satory '75

A report from the French arms manufacturers' exhibition by **Christopher F. Foss**

limitations it is not possible for the vehicles to fire their weapons.

### Tanks

The current Main Battle Tank of the French Army is the AMX 30, which has been exported to many countries. The basic model is armed with a 105 mm gun, a coaxial 12.7 mm machine-gun or a 20-mm cannon, in addition to a 7.62 mm machine-gun mounted on the commander's cupola.

As with most tanks, there are a large number of variants of the basic vehicle. These include the 155 mm GCT self-propelled gun which can fire a shell weighing 43 kg to a range of over 23,000 m, an armoured recovery vehicle, a bridgelaying and two types of anti-aircraft tank. The first of these is armed with twin 30 mm cannons,

and a radar system is installed at the rear of the turret so that targets can be tracked. The second model is armed with two launchers for the Roland anti-aircraft missile, a further eight missiles being carried inside the hull. There are two models of this, one clear weather and one all weather. Roland is a joint French/German development and has also been ordered by the United States Army. Finally there is the AMX 30 chassis with the PLUTON tactical nuclear missile installed on it, which is now in service with the French Army.

**Top of page** Saviem SM340 with semi-trailer and AMX 30 MBT. **Below** AMX 30 anti-aircraft tank with two 30 mm cannons. **Below left** AMX 30 with schnorkel.



September 1975



### AMX 13 family

Although the AMX 13 was designed some 30 years ago, it is still in demand in many parts of the world. The basic tank is armed with a 90 mm gun and a co-axial machine-gun. Other members of this family include 155 mm self-propelled gun, 105 mm self-propelled gun (two models), armoured recovery vehicle, bridgelayer, combat engineer vehicle and infantry combat vehicle armed with a 20 mm cannon or a 12.7 mm machine-gun.

There are many variants of the infantry combat vehicle including 81 mm and 120 mm mortar carriers, missile vehicles, command vehicle, ambulance, load carriers and ammunition support vehicle.

### AMX 10 family

The latest vehicle to enter service with the French Army is the AMX 10 P infantry combat vehicle. This is powered by a 280 hp engine which gives it a top speed of 65 km/hr, while it is also fully amphibious, being propelled in the water by hydrojets. This is armed with a turret-mounted 20 mm cannon and a co-axial 7.62 mm machine-gun.

Other members of this family include the AMX 10 TM mortar-towing vehicle which tows the Brandt 120 mm mortar and carries a total of 60 mortar bombs, the AMX 10 P with the Ratac radar system, and AMX 10 PC command vehicle which has additional radios and a generator. A special model of the AMX 10 P has a new turret mounting four HOT missiles in the ready-to-fire position and a further 15/20 missiles inside the hull. Also on show for the first time was the AMX 10 C, which has a re-designed hull with a new turret mounting a 105 mm gun and a comprehensive fire control system.

There is also a series of wheeled vehicles on the AMX 10 hull, the first of which to enter production will be the AMX 10 RC which has the same turret as the AMX 10 C, but suspension which can be adjusted to suit the ground conditions. Like other members of the family it is fully amphibious.

### Panhard vehicles

The name of Panhard is known the world over for its wheeled armoured vehicles and in the last 15 years the firm has built well over 4,000 AML armoured cars and M3 series armoured personnel carriers.

The 4x4 AML can be fitted with a large variety of turrets with a choice of armament installations, including 7.62 mm and 12.7 mm machine-guns, 20 and 30 mm cannon, 60 mm mortars and the 90 mm gun. The M3 can also be fitted with a wide variety of armament installations, the latest model on show at Satory having a new turret mounting four HOT missiles with a reserve supply of missiles inside the hull. The basic model of the M3 is used as an APC but it can also be used as a riot control vehicle, load carrier, repair vehicle, command and radio vehicle or as an ambulance. The M3 is fully amphibious, being propelled in the water by its wheels.

Continued on page 44



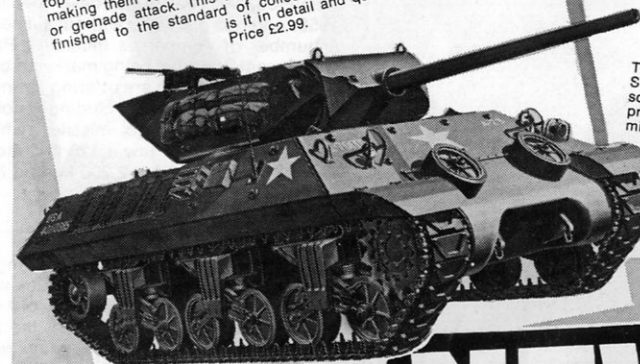
Top Desert-kitted and painted AMX 30. Above AMX 10P armoured personnel carrier. Below Panhard M3 armoured personnel carrier.



## 3 Great Tracked Vehicles for you!

### U.S. TANK DESTROYER M10

**THE WOLVERINE**  
First used against Rommel's Pz III and IV units in Tunisia, the M10 was built around the engine and suspension of the M-4 Sherman. These vehicles went into action with strong infantry protection as the turret was open, thus top to allow quick access to the 76 mm cannon, making them vulnerable in close support action to mortar or grenade attack. This superb model by TAMIYA may be finished to the standard of collectors items, so accurate is it in detail and quality of decals.  
Price £2.99.



## RUSSIAN TANK T34 76



**1942 PRODUCTION MODEL**  
The "Queen" of Russian armour and the root from which modern Soviet Tank forces stemmed. The T34/76 was considered by some experts to be the finest tank in action in WWII, prior to the production of the Panther. The Germans praised it as the best mid-war tank and made it the model for their famous Panther. This model from TAMIYA is all that you have come to expect from this famous manufacturer. This version has the long barrelled 76.2 mm gun and the kit includes a Commander and a soldier figure. Complete and accurate decals are supplied together with full painting instructions. Price £2.50.

### GERMAN 8ton HALF TRACK 20mm FLAK VIERLING Sd.kfz 7/1

**NEW FROM TAMIYA**



in 1/35 scale

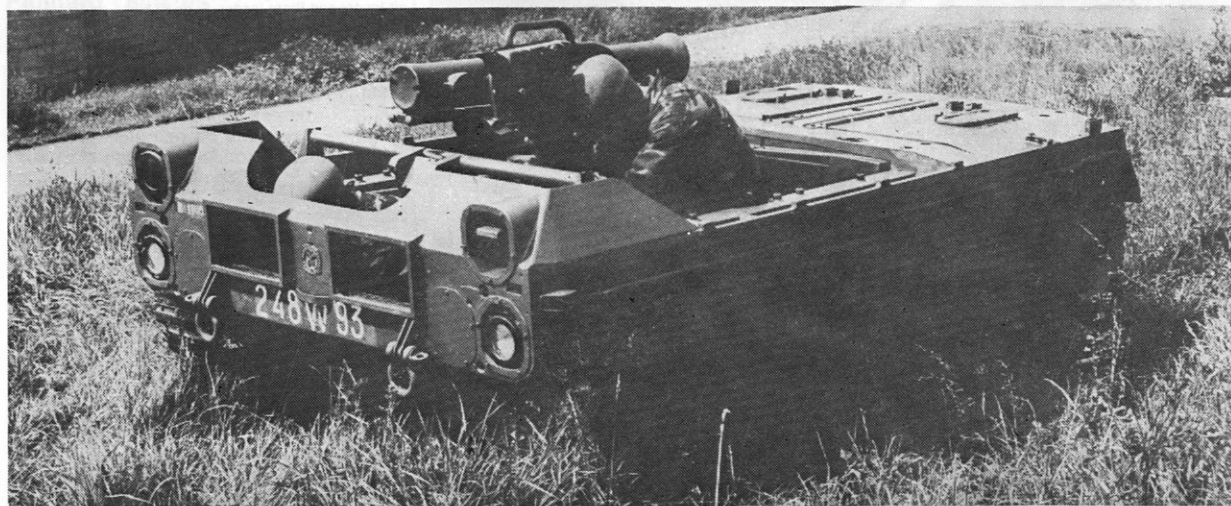
This versatile tractor with its 6 cylinder Maybach 130 bhp engine so impressed the British Army that they carried out tests with one captured in Libya and then asked Vauxhall Motors Ltd., of Luton to develop a similar vehicle. It was standard equipment of the fast advancing German armies in most campaigns of WWII. With its 20 mm four-barrelled AA gun firing 250 rounds per second, it became the scourge of low flying aircraft. This beautifully produced kit includes all accurate decals and a Commander figure, Carrier, Tracker, Left loader and Right loader. Price £3.80.

**RIKO** RICHARD KOHNSTAM LTD., 13-15a HIGH STREET, HEMEL HEMPSTEAD, HERTS.





**Top** Saviem 4x4 VAB. **Above** Berliet VXB 4x4 armoured personnel carrier. **Below** The little VP 90 with MILAN ATEW system.



ammunition and so on. Both Panhard and Saviem built 4x4 and 6x6 vehicles and after extensive trials the Saviem vehicle was selected by the French Army. The first model to go into production will be the 4x4 model. This is powered by a 245 hp diesel which gives it a top road speed of 90 km/hr. It is fully amphibious, water speed being 7 km/hr. All models will have a NBC system and a wide selection of armament installations will be offered.

#### Berliet VXB

This is now in service with the French police and is provided with a special hydraulically operated blade for clearing away obstacles. A fully amphibious model is available and various armament installations are possible.

#### VP 90

One of the smallest vehicles at Satory was the VP 90. This vehicle was developed in the 1950s and was marketed without success by a number of companies including Hotchkiss-Brandt. It is now being marketed by the LOHR Company who are offering a range of armament installations including recoilless rifle, machine-guns and missiles, while it can also be used to tow a 120 mm mortar. The VP 90 weighs only 2,200 kg and has a top road speed of 86 km/hr.

#### Trucks

Many trucks were shown including the recent Berliet GBD 6x6 tactical truck which can carry 7,000 kg across country or 14,000 kg on roads. At the other end of the scale was the smaller Saviem SM 8 truck which can carry 4,000 kg of cargo or 20 troops. Tank transporters also featured in the exhibition as did engineer equipment.

In the amphibious display one of the highlights was the display by the pontoon boat manufactured by the GIAT, the equivalent of our Royal Ordnance Factories. This is very manoeuvrable and has a top speed of over 25 km/hr. It has been designed for assisting in pulling pontoons and general duties associated with military bridging. □

#### VAB

Several years ago the French Army issued a requirement for a vehicle called the VAB. The task of the VAB was to support front line units, ie carry troops, supplies, fuel,

# Peninsular War figure conversions

Last in the current series of articles from **Martin Windrow** and **Gerry Embleton**



*Private, 43rd Light Infantry, 1812 — reproduced by permission of Ian Allan Ltd, from Military Dress of the Peninsular War. The dull red jacket is faced and lined white, the trousers are blue-grey, and the shako has chin-tapes — a common feature. Note Light Infantry shoulder wings, red with regimental lace, and white tufted edge, and green shako tuft. The New Land pattern musket can be made by the neat-fingered from a Brown Bess with a scroll trigger guard from a Baker Rifle. The barrel was often browned to cut reflection. The regimental lace had a red and black line; in 54 mm scale it is hardly possible to show such detail, so plain white lace is probably the answer; in '1:1 scale' plain lace was the distinction of sergeants.*

NEARLY ALL military miniatures available in 54 mm scale, as metal castings or as kits, depict officers and men in full fighting equipment. This obviously fills the requirements of most modellers; but a wealth of attractive and unusual detail can be incorporated in 'camp scenes', showing soldiers off duty. Sometimes these seem to capture the real flavour and atmosphere of the Napoleonic Wars more vividly than combat scenes. They also offer the modeller willing to do his own research a great deal of pleasure, in that he is creating something truly his own.

In camp Wellington's soldiers usually wore one of a number of patterns of simple forage cap. Information on these is scarce, but enough is known to enable the modeller to simulate the most usual type without difficulty. This was a sort of pork-pie bonnet, identical to the Scottish 'hummel bonnet' and, indeed, often supplied to British regiments by the manufacture of the Highland headgear. Colours varied, and no firm regulations governed the details — both a curse and a blessing to the imaginative modeller! Usually they seem to have had a dark blue crown, and a coloured band, often but not necessarily in regimental facing colour. They sometimes had a tufted pom-pom or tourie on top, and sometimes just a covered button. These touries seem frequently to have followed the colour of the company shako tuft — red for centre companies, white for grenadiers, and green for light infantrymen.

As illustrated in the accompanying photo, this bonnet can be made quite simply by applying a good blob of body-putty to a suitable head, shaping it with a tool dipped in water while still tacky, and cementing a band in place round the lower part, using thin plastic card. The tourie can be made from putty, scrap plastic, or even Plasticine.

The rest of this model was made from the torso and arms of a Highlander, with the trousered legs from an Imperial Guardsman kit; the rolled cuffs have a nice informal look. Since there are not going to be any cross-belts or haversacks, take care to file the various join-lines very smooth, and fill with putty if necessary. As for a colour scheme, the choice is as wide as your reference. You could finish him as a 42nd Highlander: blue bonnet, white or green tourie, red-and-white diced band, and jacket as per the kit instructions (note that as he wears flank company shoulder wings, he should have a suitable bonnet tourie). The trousers can be grey, or, for the ambitious, tartan trews in the same scheme as the Black Watch kilt — in cold weather Highlanders quite often made up their kilts into trews. Alternatively you could finish him as any British line battalion which wore single bastion lace loops: the 4th Foot, with blue facings; the 5th, with goshing green; the 30th, with pale yellow; the 59th, with white — all these served in the Peninsula. If you are prepared to file off his lace and paint your own square-ended loops, the list becomes endless.

The number of things you could put in his hands, and the posing of the figure, are also wide open. A pipe and tobacco pouch? The hatchet from the American Revolutionary



soldier kit, and a bundle of twigs or match-stick kindling? A canteen and a panikin? His cross-belts and equipment? Use the kneeling Rifleman's legs instead, and he can be laying a fire, or cooking his beef, or trying to entice a chicken into a sack! You could have a lot of fun with a group of these figures: some dressed like our model; some with shakos on the backs of their heads; some still in the cross-belts having come off guard, but bareheaded; add a fire, a cauldron, a dog and a couple of bottles, and you have the makings of a superb little diorama. The really ambitious could even make from scrap plastic a concertina, or a fiddle and bow, and set the scene at an impromptu 'company smoker' in the lee of a ruined cottage . . .

As this is the last of this series, we thought we would end with a miscellany of suggestions which modellers can take further on their own.

**Highlanders** in the Peninsula often lost the plumes of their mounted bonnets, and after a few months in the mountains they would frequently be reduced to wearing the unmounted 'hummer'. This can be simulated by exactly the same process as described above for the forage cap. By 1813-14 Black Watch soldiers are described as wearing this with a single red feather fixed to the front. Highlanders in kilts and Highlanders in trews would be seen in the ranks together during the winter months. Highland sergeants wore the crimson sash with a central stripe of facing over the left shoulder and tied on the right hip; they carried broadswords ('claymores') in place of the regulation British sergeant's sword, frogged on the left hip in the usual way, and wore haversack and canteen on the right hip. Centre company sergeants carried the pike, and wore chevrons on the upper right arm; the 42nd wore a glazed lace for NCOs, best simulated with silver — this appeared in the chevrons and on all other parts of the uniform normally laced with white. Remember that the peak was attached to the bonnet on campaign, and the sporran was *not* worn. The 42nd light company wore green-over-white hackles in the bonnet, the grenadiers red over white, and the centre companies plain red.

**Light Infantry** regiments, like the light companies of line regiments, wore the tufted shoulder wings provided in the Black Watch and Coldstream kits. These were red, with regimental lace and white tufting. The shako of the Rifleman should be used, with the cockade and badge and with a green tuft, but without cords. The two most famous regiments in the Light Division, with the 95th Rifles and the Portuguese *caçadores*, were the 43rd and 52nd Light Infantry. A private of the 43rd is illustrated here: the 52nd wore buff facings and square, paired lace loops, and regimental 'metal' was silver — as was that of the 43rd. An officer of Light Infantry could be modelled from a Rifleman kit and a pair of Hussar legs in overalls — see 43, Plate 9, *Military Dress of the Peninsular War*. A small group of Light Infantry and Rifles would make an attractive model, with pleasant colour contrasts.



Unpainted model of British infantryman in camp uniform, made from 42nd Highlander and Imperial Guardsman parts with scratch-built bonnet. This model offers a feast of animation ideas and can be finished in a number of ways.

**Portuguese Line Infantry** (see MDPW, 44, Plate 9) can also be modelled from Rifleman and Coldstream Guards kits without much difficulty; they wore *barretina* shakos (see article on *caçadores*, March issue) with a blue single-breasted jacket picked out with red and with coloured facings, and grey or white trousers.

The famous clash at Albuera in May 1811, between Colborne's Brigade and the *Lanciers de la Vistule*, could be reproduced by experienced modellers using Airfix kits. The infantry battalions involved were the 1/3rd Foot, 2/48th Foot and 2/66th Foot. These can be modelled exactly as the 45th Foot (see July issue, article on battalion company sergeant of 45th). The 3rd had buff facings, square paired loops and silver 'metal'; the 48th had the same scheme except for gold 'metal'; and the 66th had yellowish green facings, single square loops, and silver 'metal'. The *Vistula* Lancers wore an attractively severe dark blue and yellow uniform, which could be simulated by converting the Polish Lancer of the Guard kit (see MDPW, 61, Plate 13 for details).

The new Airfix release of a French Line Infantryman in the 54 mm series naturally opens up tremendous possibilities for the Peninsular War modeller. Although the *lignard* wears the 1812 tunic, thus cutting out straightforward models of scenes before this date, the appearance of another basic shape of uniform torso in the series will widen the options for conversions considerably, and the shako will be particularly welcome. We leave you with that mouth-watering thought!

Although this is the last of the Peninsular War series, Martin and Gerry will be back soon with a brand new series of figure conversions. **Ed.**

DURING THE EARLY part of a very hot and dusty June, artillery from five nations fired across the wide expanses of Salisbury Plain. This artillery was from the Allied Command Europe Mobile Force (Land), more usually referred to as AMF(L) or AMF, and it was taking part in Exercise 'Ardent Ground'. 'Ardent Ground' is the annual live firing exercise of the AMF, and this year it was the turn of the United Kingdom to be the host for this most unusual formation. The AMF is designed to be a sort of 'fire-fighting' force, ready to be used anywhere in the NATO area when need should arise. For this reason all the units involved are highly mobile and trained for rapid deployment. During the exercise helicopter support was given by Pumas from the RAF and Bundeswehr CH-53s, while much of the more mundane logistic support came from the Bulford-based Logistic Support Battalion of the AMF(L).

The artillery involved was one battery from the United Kingdom, the USA, Italy, Belgium and Germany. All the batteries used 105 mm howitzers and although they all fire the same ammunition, each battery used a different gun and equipment. Overall command and control came from a British unit and fire control orders were issued in English and translated at battery level when necessary. The exercise went on for the best part of two weeks and was judged to have been 'useful and successful' and was completed by a large demonstration at Larkhill when all the batteries involved took part in a demonstration to NATO officials. It was at this demonstration that most of the photographs with this article were taken, and it was a unique opportunity to examine the hardware in use with light artillery units in NATO.

The British battery was 13 (Martinière) Light Battery RA, normally part of 19 Field Regiment, RA. This unit is based at Larkhill and is equipped with the 105 mm Pack Howitzer, known officially as the L5 (Carriage L10A1). This howitzer was designed in Italy and is now in use with 19 nations. It has a range of 10,200 metres and as well as being used as a field gun, it also has a useful anti-tank role. Although still in large scale service with the British Army it is already scheduled to be replaced by the British 105 mm Light Gun, one of which took part in the demonstration.

From Italy came the 40th Battery from the Sisa Artillery Battalion based at Sisa in Northern Italy. Not surprisingly, they too were equipped with the 105 mm Pack Howitzer, but their guns differed from the British guns in having no shields (the British guns can be used with their shield removed but are not often used in this form) and different sighting equipment. The Italian howitzers are known as the 105/14.

The Pack Howitzer was also in use with the German battery which was from 235 Mountain Artillery Battalion based at Bad Reichenhall. But the German howitzers differed from the others in having a large and oddly-shaped muzzle brake.

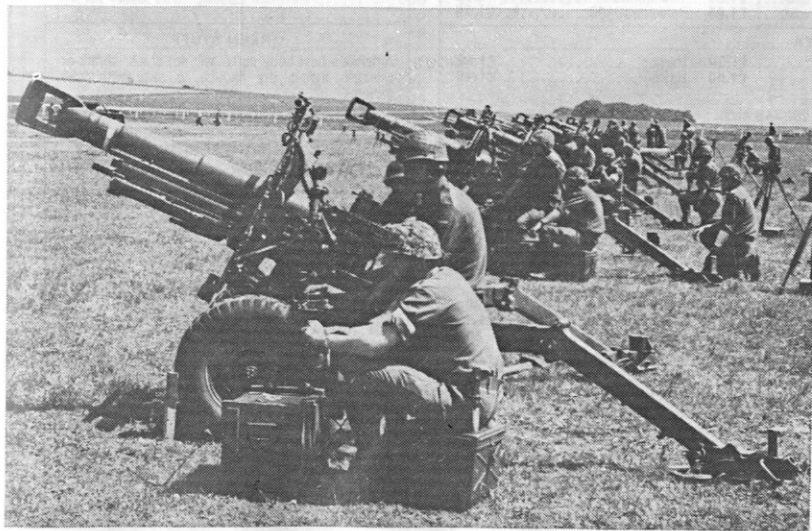
The Belgian battery was a Para Commando Battery from Brasschat. This unit was equipped with an American howitzer, the 105 mm M-101A1. This weapon was



## in the field

Terry Gander

NATO at work — Exercise 'Ardent Ground'



originally the war-time M-2, and it is still in service all over the world.

From the United States Army came the superbly-equipped Battery 'D', 1st Battalion, Airborne Battalion Combat Team 509, normally based at Vincenza in Italy. This unit was equipped with the 105 mm M-102 Light Howitzer, a remarkably light and handy piece of ordnance. The general standard of equipment of this unit was superb, from the items of personal equipment, the fire control and communication gear, right through to the M-561 Gama Goat tractors. All who saw this unit could only regard its lavish scale of equipment with a certain degree of envy and amazement as to how much it all cost the American taxpayer. In action, it was most noticeable that the gun crews carried out their tasks in a seemingly relaxed and casual manner when contrasted with the much smarter and crisp conduct of the Royal Artillery, but it must be said that their rounds were always on target at the right time.

Although the guns were very much the centre of attraction, I took a little time off to inspect the vehicle park. There was plenty to see, for here the logistic difficulties that NATO has to face really showed themselves. Every nation that took part in the exercise had a different type of vehicle. Most obvious was the large and complex M-561 Gama Goat, a superb vehicle that can just about 'go anywhere'. Belgian and German Unimog lorries made up much of the park while at the smaller end of the transport line things were even more varied with Belgian Minerva Land Rovers, Italian Fiat AR59 Campanellas, German Mungas and VW181s, and the modern equivalent of the Jeep in the shape of the M-151. It came as a surprise to see Bedford RL lorries in use with the Belgian contingent, most looking a bit battered but still good for a while yet.

It was this variance of equipment that came as a surprise. All the guns on show were different, even though three nations were using the same basic design. They did all use the same ammunition but each battery had its own fire control and communications system, and the three nations using the Pack Howitzer each had differing gun drills. NATO has now been in existence for over 25 years, so surely some effort should have been given before now in at least standardising on some items of standard equipment such as lorries, small vehicles and communication sets and systems. It was obvious that the artillery component of AMF(L) is, despite the many difficulties of differing methods and equipment, a very efficient and capable force, but one cannot help wondering how much easier and more efficient it would be if some degree of standardisation had been applied. After all, NATO has been around for over 25 years now. □

Top left British Pack Howitzers in action. Centre Belgian M-101A1 howitzers. Left German gun crews 'at rest'. Note muzzle brake. More photos on page 50.



## KITS AT BUDGET PRICES

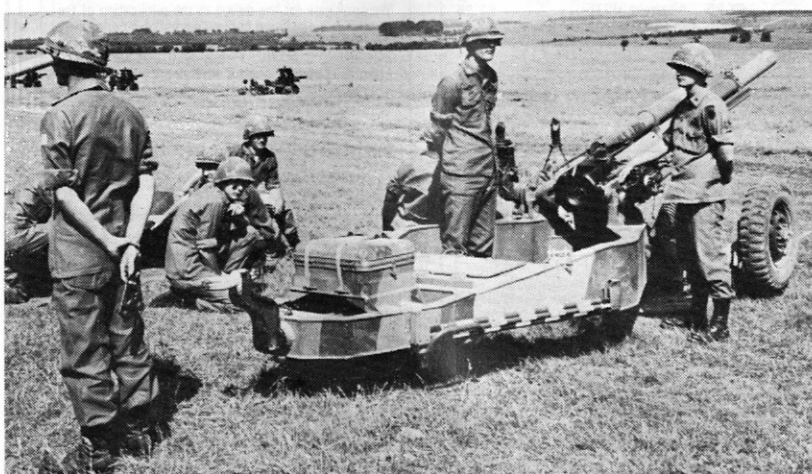
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7 M4A1 Halftrack	8 Tiger 1E	9 Panther G
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13 Schwimm/Kettenk.	14 Sdkfz 7/1 with 4AA	15 M4 Sherman
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P51D Mustang ..... 50p	A37A ..... 50p	P47 Bubble Top ..... 50p
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168 Pembroke ..... £1.25	161 N.A. Savage ..... £2.35	152 U2 ..... £1.00
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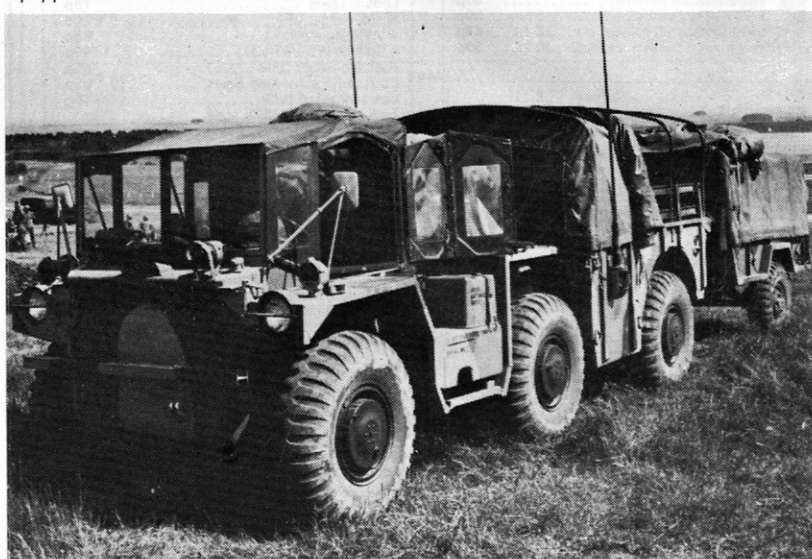
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We apologise for the delays in the publication of the quarterly, these being entirely beyond our control. By the time this issue is read we hope that you will have received your copies. Please note that we are still offering all bound volumes at retail price POST FREE.	
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Prices are correct at the time of going to press and are subject to levels ruling at the date of despatch. All goods are offered subject to availability.	





Top The Italian 105x14. Above The American M-102. Below M-561 Gama Goat seen here equipped as a command vehicle.



## Hedgehog

THE SHERMAN 'Hedgehog' was a field improvisation designed to tackle the thick hedge-rows of the bocage during the Normandy break-out operations in 1944. Sharpened prongs, fashioned from German beach obstacles, were welded to the vehicle's lower hull front. These tore into the roots of the banks and used the tank's own momentum to rip the hedges apart.

This is the model depicted in one of Monogram's two latest 1:32 scale AFV releases.

Finely moulded in olive green plastic, though with rather more flash than we have come to expect from modern Japanese tank kits, this kit can be built up as a standard M4 with no embellishments, or as the 'Hedgehog' version, while a particularly nice touch is the provision of ready moulded 'sandbag' sections which can be cemented on the hull front and sides to represent the additional improvised armour protection applied to so many Allied tanks after D-Day.

Although the basic kit on its own is excellent, a bonus comes in the form of a full-colour leaflet on detailing and weathering the model, incorporating it in a diorama, and converting it into an M4A3 with new engine covers, suspension, front hull and other detail alterations.

Two crew figures and a driver's head and upper torso are provided, plus two sets of decals which, unfortunately, have a high gloss surround.

## 'Screamin Mimi'

ANOTHER NEW Sherman variant in 1:32 scale from Monogram depicts a cast-hull M4A1 with multiple rocket tube attachment on the turret, although the kit can be assembled 'straight' as a basic M4A1 without rockets or, by altering the suspension as described in the accompanying colour leaflet, turned into a T-34 Calliope.

Once again, moulding detail is good though there is some flash, three crew members are provided and decals for two different vehicles.

These two kits complement each other beautifully and clearly bring home the different appearance of the cast and welded hull Sherman variants.

## Spitfire Mk I

A RECENT 1:72 scale release from Hasegawa contains alternative propeller and canopy parts for building an early or later Spitfire Mk I in the markings of either 19 Squadron at 'Dacksford' (sic) in 1939 or 54 Squadron at Hornchurch in 1940.

Moulded in silver-grey plastic, the model is dimensionally accurate and incorporates very fine raised surface detail, the fabric rudder surfaces being particularly well represented.

Although you don't get very many parts for your 50p, this kit of the original Battle of Britain Spit is guaranteed a ready market. Our sample was kindly supplied by Ren-Models of Cambridge, who can supply by post.

# NEW kits and models

## Another P-51D

HASEGAWA'S SECOND new aircraft release in 1:72 scale is of the P-51D Mustang. Although containing fewer parts than the recent Airfix release, this kit is accurate in outline (in fact, many parts are interchangeable, so close is the match!) and very finely moulded. It would, indeed, be possible with a little work to mate the Hasegawa wings (which incorporate fine wheel well detail) with the Airfix fuselage (which has such excellent cockpit detail), though this would be a pricey exercise!

Two cockpit canopies are provided, the earlier flat-backed and the later rounded version, and decals for 'Nappy IV' of the 339th Fighter Wing or 'Petie 2nd' of the 352nd Wing. Price of this kit is also 50p from Ren-Models of Cambridge.

## Mounted troops

TAMIYA'S LATEST venture in the 1:35 scale figures field is a boxed set of Wehrmacht mounted infantry. The title is a bit of a misnomer since in fact the set contains one horse and figure only, the other figure being on foot.

The horse is moulded in Airfix style, with two body/leg halves, a head, 'earpiece', mane and tail. Brow band, nose band and cheek straps are moulded on to the head, but a sheet of thin plastic card and cutting templates are provided for the reins and other straps. The saddle is nicely moulded but the stirrups, in our opinion, are rather large.

The mounted figure can be assembled sitting at ease holding the reins, holding a pair of binoculars to his eyes, or with one hand on the reins and the other clasping the

Above right Revell's latest aircraft release depicts an F-104 Starfighter and is to approximately 1:69 scale. The kit includes optional position landing gear, crew figures, clear cockpit canopy, four Sidewinder missiles — two for the aircraft and two for the missile trolley also included — three ground crew figures and a choice of either German Luftwaffe or Royal Danish Air Force decals. Price is 60p. Right Another new Revell model in an unspecified scale is of the Piasecki YH-16 helicopter. The kit actually represents the YH-16A which featured two turbojets as opposed to the reciprocating engines of the earlier YH-16. Other features of the model include a detailed cockpit, moveable rotor blades and wheels, clear cockpit canopy and official USAF decal sheet. Price of this kit is also 60p.

binoculars or one of the weapons included in the kit.

The foot figure is standing at a rest position holding a machine-pistol under his right arm, and has two stick grenades thrust through his belt (moulded integrally). Both figures wear jodhpurs.

All components of this kit are crisply moulded in white polystyrene, and the box artwork includes colour illustrations of Wehrmacht cavalry collar patches and shoulder boards, etc. An unusual and welcome addition to the 1:35 scale figure range.

## Pak 40 L/46

ARTILLERY PIECES seem to be becoming more popular with military modellers, and Tamiya's 7.5 cm Pak 40 in 1:35 scale, which comes complete with three crew figures, is especially welcome.



## 1:35 scale SdKfz 222

THE LITTLE German four-wheeled SdKfz 222 armoured car has always been a modellers' favourite, and Tamiya's new 1:35 scale kit does full justice to this versatile reconnaissance vehicle.

Moulded in dark grey plastic, it includes an extremely detailed chassis and transmission, crisply moulded two-piece hull with a wealth of tiny additional detail parts,





This portly but attractive model of the North American FJ-1 Fury is made from RAREplanes' latest vac-formed kit release. Retailing at £1.20 from good model shops or direct from RAREplanes, 18 Hillford Place, Earlswood, Surrey, this kit of the US Navy's first operational jet fighter has 36 parts sharply moulded with authentic detail, and includes a fully detailed cockpit. Diagrammatic instructions, full scale 1:72 plans and colour schemes are clearly printed on the packs, making it an excellent purchase.

fully revolving 20 mm gun with two attached seats, and a commander figure to sit in the turret.

To recreate the anti-grenade 'chicken wire' on the turret, Tamiya have included a fine mesh material and templates on the instruction sheet for cutting out the various panels to fit into the hinged turret top framework.

Decals are provided for the 5th, 15th, 21st, 'Grossdeutschland', 1st SS and 2nd SS Divisions, as well as national and tactical devices and number plates. Overall an excellent kit which deserves to be very popular.

### Authentic sprays

TO WHAT WILL undoubtedly be the delight of many a modeller, Humbrol have now started issuing their Authentic Colour paints in aerosol spray cans. These have the dual advantage of enabling a basic coat of col-

our to be applied much more rapidly than with a brush (of especial importance to, say, wargamers wishing to complete a complete unit of tanks all at once); and also give a much more even coat than many modellers can achieve with brushes. Now those of us who can't afford airbrushes haven't got any excuses! Price per can is a very reasonable 58p since it goes a long way even with the inevitable wastage.

For those modellers more interested in flying or floating models, Humbrol have also just released a new fuel-proof finish for flying model aircraft and boats. Called 'Epoxycoat', it comes in a variety of colours, can be applied with a paintbrush or spray gun (using Epoxycoat Thinners), and forms a hard and completely fuel-proof finish over any surface which has previously been clear-doped. Price per Epoxycoat pack (compound plus hardener) is £1.10, the colours available being red, white, black, yellow, lime green, French blue and orange.

Humbrol's new Authentic colour aerosol cans are ideal for painting large areas of a single colour, particularly when the colour is light - such as aircraft undersides, where it is difficult to achieve a smooth and even finish with a paintbrush.



## news for the wargamer

**Airfix Magazine Guide 9: Ancient Wargaming**, by Phil Barker. Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL, in association with Airfix Products Ltd. Price £1.20.

PHIL BARKER's name will be known to all ancient period wargamers, and his new book is a 'must' for everybody specialising or interested in this most diverse and colourful of all wargaming eras. It includes chapters on how ancient wargaming started, the formation of the Wargames Research Group and the evolution of their 'ancient' rules which are now used nationally, then goes on to show how to fight and win wargames using these rules.

Individual chapters cover the widely different troop types and their equipment, battlefield tactics in real life and on the table top, and how to choose and raise an ancient army. The latter section includes full 'cast lists' enabling potential wargamers with no previous experience of the period to build up balanced and historically accurate forces.

Whether it's the steady tramp of a Roman legion on the march, or the wild thrill of a Hun cavalry charge which appeals to you most, there is plenty to glean from this detailed, well illustrated and reasonably priced book.

### Viking

COVERING THE period 700 BC to 1300 AD, this game (part of the PRESTAGS series - 'Pre-Seventeenth Century Tactical Game Systems') replaces SPI's earlier 'Dark Ages', the series having been designed to substitute for several old games with a view to achieving some kind of historical 'flow' through the whole period (3000 BC to 1550 AD) and at the same time tidy up some of the rules which experience has now proven inadequate or inappropriate. (It is also implied in the designer's notes that the quality of proof-reading has now been much improved, but the evidence for this is not too strong!)

SPI freely admit that the best way to learn the rules is from someone else who already has, and although this is certainly true, the individual rules themselves are basically - as ever in board wargames - simple, and once learnt the general rules are applicable to the whole series. In addition, there is a leaflet with further rules only applicable to the game in question.

Also on this leaflet is the manufacturer's choice of scenarios: Tours, Clontarf, Stamford Bridge, Hastings, Manzikert and Hattin are amongst those present, but we note with disappointment the omission of such

Continued on page 54

# MODELDECS

PLASTIC KIT SPECIALISTS—ASSOCIATE MEMBER I.P.M.S.

## MODELDECAL DECALS

1/72 SCALE

All listed sets available:

- 1: BAC Lightning Mk. 1A, 2 and 6 (six alternatives in RAF service).
- 2: F-4 Phantom (VFMA-531, USMC; 497th TFS, USAF and 767 Sqn., RN.).
- 3: N.A. F-100D Super Sabre (four alternatives in USAF service).
- 6: U.S. Navy (F4U-1A Corsair, VF-17; SB2C-3 Helldiver, VB-7; OS2U-3 Kingfisher).
- 7: RAF Hunter F.6, 14 Sqn.; Phantom FGR2, 6 Sqn.; Meteor F.4, 63 Sqn., and Harrier GR.1, 1 Sqn.
- 10: USAF-S.E. Asia (RF-101C, F-105D, A-1H and EC-47N).
- 11: F-102A, 460th FIS, USAF; Harrier GR.1, 4 or 20 Sqn. RAF, Sabre 6, 430, Sqn. RCAF and alternative RCAF Sabre fin emblems.
- 16: USAF-S.E. Asia (2): F-4E Phantom, 34TFS, 288TFW, Cessna 0-2A 23 TASS, A-47 432TRW, and USMC OV-10A Bronco, HLM-267.
- 17: T-33, RCAF; F-35 Draken, 725 Sqn., Danish Air Force; Mosquito FB.VI, 4 Sqn. RAF, Skyhawk, 805 Sqn., RAN, and A-4K squadron markings for 75 Sqn., RNZAF.
- 18: Royal Navy—Post War: (Gannet 4 COD, Sea Hawk F.1., 898 Sqn., Wessex Mk. 1, Ark Royal, and Avenger 6, 831 Sqn.).
- 19: West German Air Force and Navy (RF-4E Phantom, AG51 or 52); F-84F Thunderstreak, Jabo 33; RF-84F Thunderflash, AG51; Sea King Mk. 41.
- 20: H.S. Buccaneer S.2's, 800 and 809 Sqn., F.A.A.; NF-5A Freedom Fighter, 314 or 315 Sqn., Dutch Air Force, and L-20A Beaver, 334 Sqn., Dutch Air Force.
- 21: A-4E Skyhawks VMA-311 VA-94; A-4F Skyhawk, VA-164, AD-4 Skyraider, VA-65.
- 22: A-7D Corsairs, 356 TFS, 354 TFW, and 40 TFS, 355 TFW, with alternative decals for 357 TFS, 355 TFW; T-33A, 50 TFW., and F-86A Sabre, 116 FIS.
- 23: Phantom F.G.1, 43 Sqn. Harrier G.R.1A, 3 Sqn. Lightning F.2A, 92 Sqn. All RAF CF104 Starfighter 421 Sqn. C.A.F.
- 24: RAF Hunter F.6, 79 Sqn. Phantom F.G.R.2 41 Sqn. Sea Venom F.A.W.21 809 Sqn. Sea Venom F.A.W.21 890 Sqn. F.A.A., Wyvern S.4, 831 Sqn. F.A.A.
- 25: Lightning F.2A, 19 Sqn. Canberra B(1) 16 Sqn. Harvard T.2B, 500 Sqn. Hunter FGA.9, 45 Sqn. All RAF.
- 26: Buccaneer S2B, 15 Sqn. Hunter FGA.9, 58 Sqn. Canberra B.2 10 Sqn. Gazelle H3T C.F.S., All RAF, R.N. Gazelle HT2.
- 27: Canberra T4, 231 OCU, RAF, Cottesmore 1974, Hunter T7, 4 FTS, RAF, Valley 1973 (or 56 Sqn. 1962), Phantom FGR.2, 111 Sqn. RAF, Coningsby, 1974. Buccaneer S2A, 208 Sqn. RAF, Honington, 1974.
- 28: Canberra E15, 98 Sqn. RAF, Cottesmore, 1974, Hunter T8, 764 Sqn. F.A.A., 1964. Lightning F3, 29 Sqn. RAF, Wattisham, 1971. Jet Provost T5, 3FTS. "The Swords", RAF Leeming, 1974. (Serials provided to make any one of Team)

'MODELDECAL' style fully illustrated instruction sheet, giving decal locations and full colour scheme details; is included with all Modeldecals, and commencing with set No. 17, a selection of photographs is also included.

PRICES: Sets 1 to 16 38p each  
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| A6M3 Mod 32 Zero       | 1/72 | 40p |
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important battles as Ninevah, Sagrajas, Myriocephalon and Bouvines, when several basically insignificant encounters are included. Admittedly, however, the basic system could easily be adapted to suit any encounter one might wish to refight.

Historical details unfortunately do not concentrate on the battles themselves, offering instead brief descriptions of events leading up to them. Even these leave a little to be desired.

For the wargamer, the game is playable and offers as much pleasure as ever once you get used to moving cardboard counters rather than plastic or metal figures. The counters offer all the main tactical elements requisite in this era — axemen and various other infantry, crossbowmen, cataphracts, horse archers and Viking fleets amongst others — and it is only unfortunate that in our review sample a number of these rather too well pre-punched counters were missing, presumably having dropped out during packing.

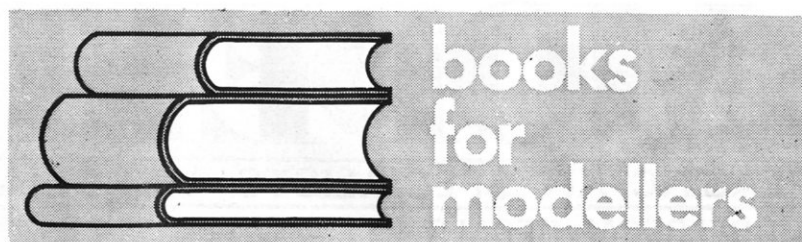
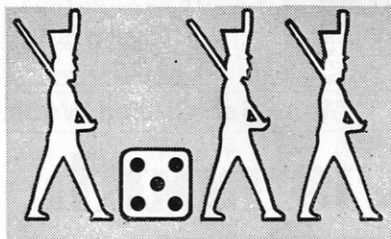
However, as much as this revised game is undoubtedly an improvement on 'Dark Ages', our basic complaint against so many board games still applies — that a defeated unit is totally destroyed, while the victor continues to fight happily on at full strength! All-in-all though, a good buy for the board wargamer and a useful aid to the potential ancient period campaigner.

**Naval Wargames**, by Barry J. Carter. David & Charles, South Devon House, Newton Abbott, Devon. Price £3.95.

THIS BOOK, covering the periods of both World Wars, is a valuable introduction to the rapidly growing hobby of naval wargaming which includes some interesting ideas, though it will obviously be of more value to the beginner than the experienced player. However, the author obviously knows his stuff and has studied the market, and gives due credit to the Leicester Micromodels rules where appropriate.

The book includes chapters on sources of model warships, how to scratch-build your own if a particular type is not available commercially, a suggested set of playing rules, and descriptions of some typical wargames fought using the author's rules to get you started. There is also a chapter on 'reading about naval wargaming' and one describing some of the Avalon Hill/SPI-type board games now available.

With the growth of Airfix's new 1:1,200 scale waterline warship series gathering pace, we can see naval wargaming catching on in a big way in the future, and can highly recommend Mr Carter's book if you are at all interested in this facet of the hobby.



## Modelling

**Airfix Magazine Annual for modellers 5**, edited by Bruce Quarrie. Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL, in association with Airfix Products Ltd. Price £1.95.

MILITARY MODELLING magazine hailed last year's *Airfix Magazine Annual* as 'the mixture as before', and we are proud to apply the same description ourselves to the latest volume.

Produced to the same format as the previous four highly successful annuals, it includes 96 lavishly illustrated pages containing features on practically all the most popular aspects of modelling.

The cover (see back cover of this issue) heralds the imminent release of Airfix's new 1:72 scale F-86D Sabre kit, and the annual includes a detailed feature by Michael Bowyer on the Sabre's development and service history, including numerous photos and three full pages of alternative colour scheme drawings.

Other features for aviation enthusiasts and modellers in the book are as follows: modelling the Lancaster Mk VI, by Bryan Philpott; converting the Airfix Scout helicopter into the Westland Wasp, by Alan Hall; modelling a variety of military airliners from Airfix 1:144 scale kits, by Richard Gardner; and scratch-building a Vickers Gun-Bus complete with vintage Daimler lorry and towing trailer, by Gerald Scarborough. Besides these, there are the annual's two regular features, the Pick of Photopage and Photo Quiz, which include numerous rare and interesting aircraft photographs sent in over the years to *Airfix Magazine* by our readers.

For military modellers the annual kicks off with another Gerald Scarborough piece, this time on modelling the massive Soviet T-28 tank in 1:76 scale (an ideal accompaniment to the T-35 featured in his book *Airfix Magazine Guide 5: Tank & AFV Modelling*). Sid Horton, breaking away from the Crimea, has provided an article on converting Airfix 54 mm Collectors Series kits to produce a figure of a Polish World War 2 lancer officer, while there is much more uniform detail in Robert Gibson's article on German mountain troops from 1812 to 1945 and Bryan Fosten's topical feature on British infantry uniforms during the American War of Independence.

Next comes a chapter on constructing a Far East diorama featuring a 1:32 scale Dodge truck and a military policeman converted from the Airfix 95th Rifleman, by Roy Dilley; and for wargamers full details on building a World War 2 harbour complex for

amphibious ops wargames by Terry Wise.

Warship and railway modellers are not neglected either, since Peter Hodges (author of *Airfix Magazine Guide 7: Warship Modelling*) shows how the Airfix kit of the battleship *Nelson* can be converted into her sister ship *Rodney*, while finally Michael Andress describes construction of a 2-4-0 Saddle Tank loco from Airfix kit parts.

'The mixture as before' indeed, and even though we do say so ourselves, a valuable purchase for every serious plastic modeller at only £1.95.

## Aviation

**Airfix Magazine Guide 10: Luftwaffe Camouflage of World War 2**, by Bryan Philpott. Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL, in association with Airfix Products Ltd. Price £1.20.

BEGINNING WITH the Nazi rise to power and the emergence of the German Luftwaffe, this book traces the development of German military aircraft camouflage and markings through the Spanish Civil War and up to the end of World War 2. If you want to know how German aircraft were painted, be it during the Battle of Britain, in North Africa or the wastes of Russia, this is a book for you.

Covering not only fighters and bombers, but also reconnaissance, ground-attack and other types of machine, this book will be invaluable to modellers as well as an important 'primer' for general aircraft enthusiasts. It is very well illustrated, not only with photographs of wartime machines, but also with line drawings showing the varying styles of national insignia, 'kill' markings, lettering style, camouflage pattern proportions and unit badges, plus several specially commissioned tone drawings of representative aircraft by aviation artist Martin Holbrook.

Finally, there is a special chapter for modellers on achieving precise colour mixes with modelling paints to accurately represent genuine Luftwaffe colours.

**Russian Aircraft since 1940**, by Jean Alexander. Putnam & Co Ltd, 9 Bow Street, London WC2E 7AL. Price £10.

FROM FAMOUS wartime types such as the Shturmovik up to today's MiG-23, MiG-25 and other, even more sophisticated types about which very little is known, this book is a complete guide to Soviet aviation and superbly complements the other Putnam books on Aeroflot and Russian transport aircraft.

Following the standard Putnam format for *AIRFIX* magazine

this type of book, it contains 555 pages and is thus a very thick reference volume. The contents are arranged in alphabetical and numerical order under designers' names, with separate sub-headings for, for example, piston-engined aircraft, jets, and other types. Despite its lack of an index, therefore, it is a very easy book to refer to.

As might be expected with any book on Russian aviation, the information presented on the early military, and the civil types, is far more extensive than that on more up-to-date military types, but this is hardly the author's fault!

Although perhaps a bit expensive for the average modeller without a specific interest in Russian machines, it is well worth considering thanks to the profusion of photographs and three-view plans (although the latter are, unfortunately, frequently too small to be much help). For the serious aviation student or historian, however, it is a 'must'.

**Aces & Wingmen**, by Danny Morris. Neville Spearman Ltd, 112 Whitfield Street, London W1P 6DP. Price £6.95.

THIS IS THE first book ever to be published about the fighter pilots of the United States 8th Air Force and associated units based in England, and the ground crews who kept them flying over Europe from 1943 to 1945. As such, it probably ranks in importance with Christopher Shores' *Aces High*, with which most readers of this magazine will probably be familiar.

*Aces & Wingmen* contains, in 488 large pages, stories of men who are famous as well as some who are less famous than they perhaps deserve, such as Marvin Bigelow and Royal D. Frey, wingmen to Richard Turner and Edmond Zellner. After all, as the book says, without a second pair of eyes the Aces could never have succeeded.

The book contains a complete list of over 600 American Aces who each destroyed five or more enemy aircraft, plus 400 photographs of aircraft, pilots, ground crews and targets. In addition, there are 16 pages of full-colour paintings of aircraft side views — Lightnings, Thunderbolts and Mustangs — by Jerry Scutts.

The book is the result of five years' intensive research and will be extremely useful to aero historians and modellers.

## Naval

**United States Navy Warship Camouflage 1939-1945**, by Chris Ellis. Pique Publications, North Lea House, 66 Northfield End, Henley-on-Thames, Oxon RG9 2JN. Price £1.20.

THIS LITTLE BOOK will prove extremely useful to the growing band of warship modellers, since this is one area where detailed colour scheme information is significantly lacking. Within the scope of its 52 pages, Chris Ellis succeeds in giving concise coverage to the camouflage and colour schemes adopted by the US Navy for application to all types in World War 2.

September 1975

It outlines the historical background to the various schemes and gives numerous additional references to supplement the selected examples illustrated.

Numerous diagrams (adapted from kit instruction leaflets) show further examples of the application of colour schemes to various types of ship, while a useful appendix lists model paints to match the US Navy colours used in real life.

## Military

**The Armour of Imperial Rome**, by H. Russell Robinson. Arms & Armour Press, 2-6 Hampstead High Street, London NW3. Price £11.95.

A BOOK OF this accuracy, detail and learning is long overdue in the field of Roman armour, and both author and publisher (particularly the designer, David Gibbons) are to be congratulated on an outstanding achievement both in presentation and in clarity.

The work itself is divided into two parts, covering helmets and body armour respectively. The former constitutes some three-quarters of the total extent, with a comprehensive classification of all helmet types, plus details on lining, crests, decoration, cheek pieces and an extensive section on the ornate cavalry sports helmets, illustrated throughout with archaeological finds, reconstructions, line drawings and contemporary pictorial evidence.

The section on body armour covers muscle cuirasses, scale, mail, lamellar and laminated armour, greaves and horse armour, with additional material on the Roman saddle, once again profusely illustrated. (It is worth remarking that even without the extremely thorough text, the pictures alone would make this work invaluable: they total some 530 plates and 204 line illustrations.)

In fact, there is very little one can say about this book except that, to the ancient period wargamer, modeller or military historian, it can be given the very highest recommendation. To the more enlightened lay reader it would also be of the greatest interest, although here the price may prove a stumbling block. However, if you can afford to buy a copy, do so.

**A Bridge Too Far**, by Cornelius Ryan. Hamish Hamilton Ltd, 90 Great Russell Street, London WC1. Price £3.95.

**A Bridge at Arnhem (Illustrated)**, by Charles Whiting, price 50p, *Arnhem Lift*, by Louis Hagen, price 35p, and *Surgeon at Arms*, by Lipmann Kessel, price 40p. Futura Publications Ltd, 49 Poland Street, London W1A 2LG.

THESE FOUR BOOKS give a very comprehensive coverage to the untidy and confusing battle for the bridge at Arnhem.

*A Bridge Too Far* deals with the German and Allied background to the 'Market-Garden' operation and the narrative takes in XXX Corps' ground operations, the American drops on Nijmegen and Eindhoven, plus the German counter-attacks.

*A Bridge at Arnhem* is concerned solely

with the British First Airborne Division — only referring to the other events of Market-Garden when they impinge directly on that engagement. It also carries the story on to the subsequent rescue missions launched by British Intelligence to recover the remnants of the Division who were unable to take part in the main withdrawal at Westerbouwing.

*Arnhem Lift and Surgeon at Arms* are the personal accounts of a Glider Pilot and a Medical Officer with the First Airborne Division.

Louis Hagen, the glider pilot, withdrew with the Division across the Rhine, but Lipmann Kessel remained behind to treat the wounded and subsequently escaped back to the Allied lines with the aid of the Dutch Resistance.

All four works make fascinating reading, the more so as Whiting and Ryan disagree quite markedly on several aspects of the planning and execution of the entire operation.

Whiting's book is a rather bitter one and lays the blame for the destruction of First Airborne squarely at the feet of Field-Marshal Montgomery because he supposedly ignored all Intelligence advice, including that from the enemy himself, in the form of the 'Enigma' cypher machine decodes which detailed the move of II SS Panzer Corps to the Arnhem area. He also brings out the old chestnut of the entire 'Market-Garden' operational orders being recovered by the Germans from the body of a dead American officer, with other details being filled in by the Abwehr double agent 'King Kong' and the Luftwaffe radio interception service 'listening in' on Allied reconnaissance aircraft sweeping the target zones before the attack.

Ryan puts a different interpretation on these events. He does not appear to know about the 'Enigma' decodes, which might have altered his appraisal, but does cover the other points; that Montgomery did not listen to the Prince of the Netherlands when he provided Dutch Resistance information to him.

'King Kong' did pass some information to the Abwehr but this was discarded as unreliable. The 'Market-Garden' orders were discovered by General Student, but in an abandoned, waterlogged Waco glider probably carrying some of General Browning's staff. This was passed at a late stage of the battle to General Model the Army Group Commander who did not believe them and regarded them as a 'plant'. He accordingly did not pass the plans on to II SS Panzer Corps or OB West the German higher command for that area. The quick reaction of II SS Panzer is therefore entirely due to its commander on the spot working on his own evaluation of the situation, which was strategically wrong but tactically correct and stopped the paratroops in their tracks.

Ryan goes on to deal with several more questions that have puzzled students of the Arnhem operation: why the gliders were not dropped nearer the bridge or right on top of it; why little use was made of the local Dutch Resistance, and amazingly enough the complete ignorance of the Driel ferry which was in use right through the battle and



by-passed by Frost's 2nd Battalion on its way to the pontoon, railway and road bridges!

After this terrific exercise in research and the inclusion of new worthwhile photographs from many sources, especially in *A Bridge at Arnhem*, it is a great pity that neither author has taken the trouble to update their weaponry and equipment descriptions. The tired old 'Mark IV', 'Schmeisser', 'spandau' and 'rocket propelled mortars' are trotted out again and again in the face of massive reference material showing these designated PzKpfw IV, MP 38 or 40, MG 34 or 42 and 'Nebelwerfers' or rocket launchers.

Whiting refers to 'Ferdinand' SP guns on several occasions and practically all German tanks are described as 'Tigers'. The production version of the 'Ferdinand' was the 'Elefant' and would all seem to have been used on the Eastern Front and Italy, so one would conclude these are one of the many other German SP gun family and some of the 'Tigers' are described in other books as PzKpfw IVs!

Ryan even appears to have difficulty with Allied equipment, viz such strange items as four-wheeled trailers, ie the two-wheeled collapsible trailer supplied to airborne formations, and a 'white' scout car, which surely refers to the manufacturer's name and not the colour of the vehicle?

Further information on British and American paratroop equipment can be found in the 'Key Uniform Guides' by Arms and Armour Press and the Macdonald Illustrated War Studies series.

## Transport

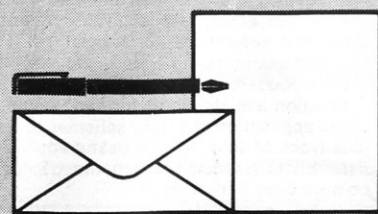
**American Trucks of the Early Thirties and American Trucks of the Late Thirties**, edited by Bart H. Vanderveen. Frederick Warne & Co Ltd, 40 Bedford Square, London WC1B 3HE. Price £2.60 and £2.95 respectively.

ALTHOUGH the first of these two titles was sent to us in error (it was published last year) it makes sense to look at these two books together. Between them they represent a cross section of trucks of various types of American manufacture or origin from 1930 to 1939, including both civil and military versions.

The first point which needs to be made though is that these books, singly or together, are not intended as a comprehensive catalogue of all American trucks of this decade, but instead present a balanced selection of typical types, varying from light duty pick-ups to heavy long distance freight carriers. Also included are interesting varieties of fire engines, buses and other specialised vehicles.

Both books are primarily pictorial, using a mixture of photographs of actual vehicles together with artwork from manufacturers' catalogues and examples of period advertisements.

Among the famous names included in these books are Chevrolet, Dodge, Ford, GMC, Mack, Studebaker and White, adding up to a truly fascinating and nostalgic package.



## letters to the editor

### Contributions

Letters to the editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit, and the publication of photographs from readers is similarly rewarded. Airfix Products Ltd award the kits on the following scale:

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Letters to the editor should be addressed to: the Editor, *Airfix Magazine*, Bar Hill, Cambridge, CB3 8EL. If a reply is wanted, a stamped addressed envelope (or International Reply Coupon) should be enclosed. All photographs submitted for consideration should be clearly labelled with the sender's name and address on the back of each.

Opinions expressed by correspondents on this page are their own and do not necessarily reflect the views of the Editor or Airfix Products Ltd.

### Sand shields

IN THE SECOND part of his article on scratch-building the Cruiser Tank Mark 1 in 1:35 scale, the author, Jeremy Broughton, invited readers to suggest an explanation for the missing right-hand sandshields on the original A9 and A10 tanks. I would like to offer a possible explanation.

The explanation depends on what sandshields are really for. The usual explanation given in most publications is that they are fitted to vehicles in desert service to reduce the amount of dust which is thrown up by the tracks when the tank is on the move, the idea being to make it less conspicuous in enemy-infested areas.

All very neat and plausible when applied to Grants and Shermans, but the Germans and Italians seem to have managed perfectly well without sandshields, so why do they apply only to British vehicles? The presence of only one on the A9 and A10 indicates, for me at any rate, another more important reason which is only secondarily concerned with tactical matters, and primarily connected with technical ones.

One of the biggest problems facing tank engines in desert conditions is dust. If too much of it gets into a tank's engine compartment it can wear the engine out in a fraction of the time normally taken in temperate conditions. Consequently, for a tank engine to run at its best, you have to reduce

the amount of dust that gets in through the air intakes without reducing the volume of air needed to stop the radiator overheating.

Most of the dust comes from the tracks, therefore by shrouding the tracks near the intake grilles less dust can get at the engine, but the grilles stay clear for the passage of air. On the A9 and A10 cooling air is drawn in through the intake louvers on the left-hand side, so a sandshield is fitted on that side — note in the pictures that the shield is deepest where it passes below the grilles.

The air is expelled through the louvers on the right of the engine compartment, and because dust is kept out of that side by the pressure of the exhausted air, no sandshield is needed, although a small one is fitted at the forward end of the track guards to prevent dust obscuring the driver's view ahead.

Later cruiser tanks — eg A13 and Crusader — drew in air from both sides of the engine compartment and expelled it from the hull rear, so sandshields were fitted on both sides for the reasons outlined above. The shields on the Crusader are much bigger, because air pressure was used to operate the gearbox and steering brakes, so obviously the amount of dust 'inhaled' had to be reduced to a minimum.

By the time American tanks came into widespread desert service the older cruisers had been withdrawn, and with them went the original technical requirement for sandshields. By this time the tactical advantages of having them — ie reducing dust to hide yourself — had been found, and so Honeyys, Grants and Shermans had them fitted as a matter of course.

Well, that's my explanation, and I think it's a pretty fair one all round. At least it offers one possible reason and I'd be most interested to hear if anyone else has a better alternative. This is my story, and I'm sticking to it!

Richard Harley, Midlothian.

### Chorley modellers

A NEW SOCIETY, the Chorley and District Model Society, has been formed, meeting on the first and third Wednesdays of each month at the Chorley Blind Centre, Crown Street, Chorley, from 7.30 pm, where competitions, lectures and films are held. The society caters for all types of modelling, ranging from radio control to miniature figures. Anyone interested is invited to drop in and you are assured of a warm welcome. Alternatively contact the secretary, Neil Brindle, at 12 St James Place, Chorley, Lancs (tel 72424).

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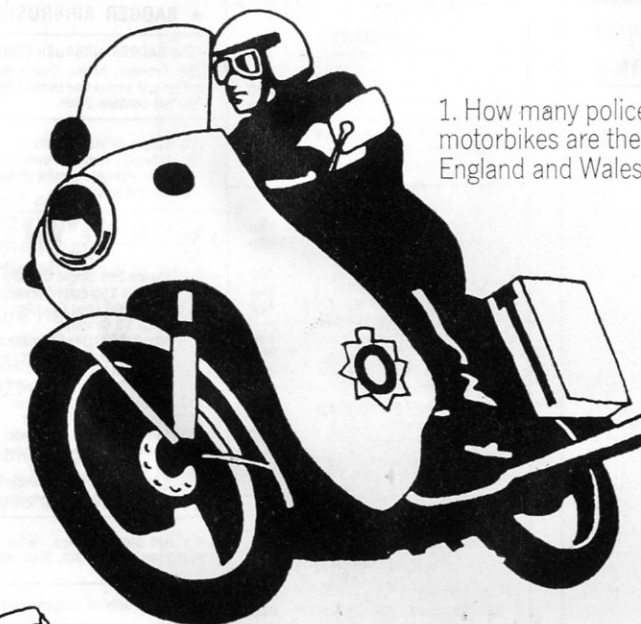
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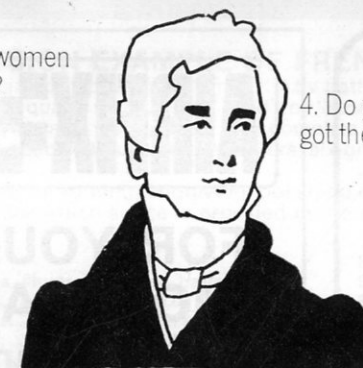
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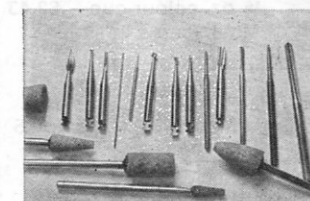
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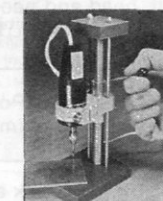
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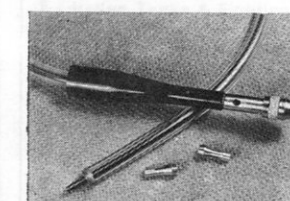
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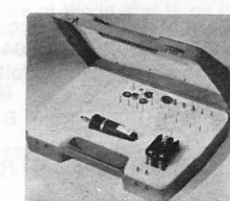
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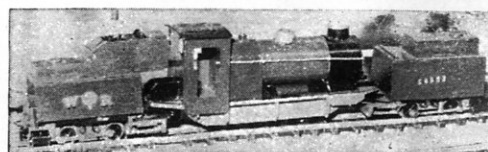
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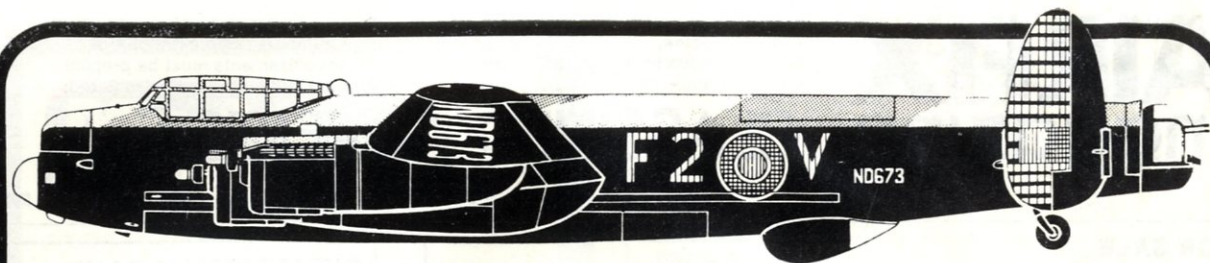
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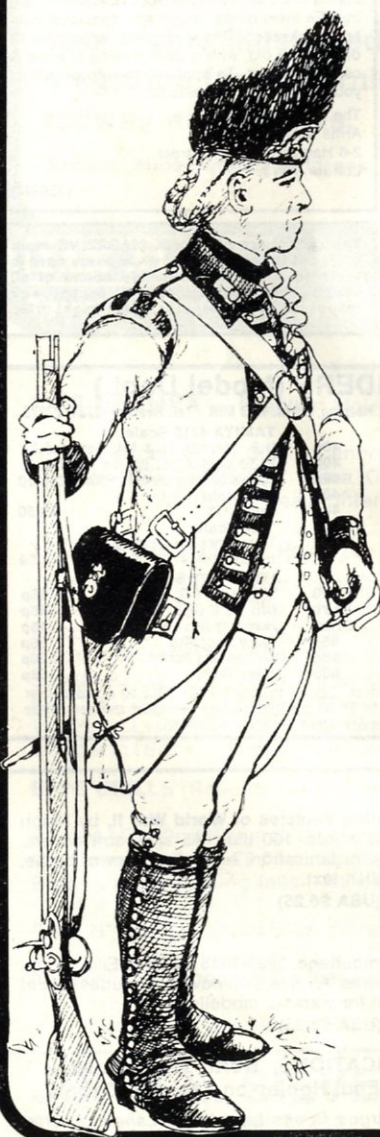
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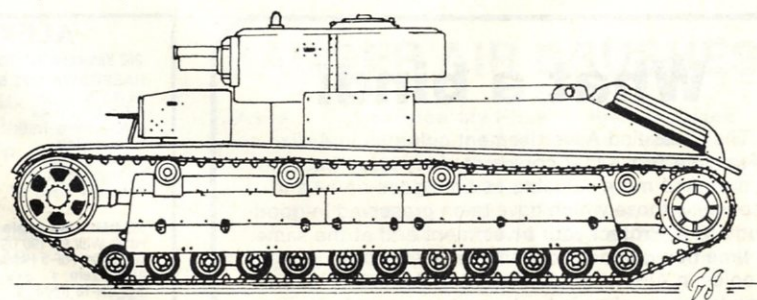


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